FROST & SULLIVAN

# Strategic Analysis of the Turkish Automotive Aftermarket

To evaluate the market potential of Turkish Automotive aftermarket

FINAL REPORT

MEDIUM & HEAVY COMMERCIAL VEHICLES

Frost & Sullivan
June 6th, 2024

THİS SECTORAL RESEARCH
COMMISSIONED BY THE OSS ASSOCIATION.

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# RESEARCH OBJECTIVES, AND SCOPE

# PROJECT OBJECTIVE AND SCOPE

AIM OF THIS PROJECT IS TO PROVIDE A COMPREHENSIVE OUTLOOK OF THE TURKISH AFTERMARKET IMPACTED BY GLOBAL TRENDS AND CHALLENGES.

**BACKGROUND**

The **Turkish Automotive Aftermarket Association, OSS,** is the industry's representative in Turkey. The company is keen to conduct a study on the Turkish automotive aftermarket in order to evaluate the market size for aftermarket parts and also develop an understanding of aftermarket dynamics in line with global and local automotive industry changes.

**OBJECTIVE**

The aim of this study is to research, analyze, and forecast the Turkish automotive aftermarket with focus in

- Current market size and growth projections
- Market size by automotive parts (to be detailed in scoping page)
- Market size by channels – OEM/ OES vs. IAM
- Market dynamics and trends
- Megatrends impacting market (Electrification, ADAS, etx)

**SCOPE**

**Region**: Only Turkey

**Vehicle Scope:** Medium and Heavy Commercial Vehicles (over 3.5 tons), Buses, Coaches and Trailers – excluding Semi Trailers

**Historical Period**: 2020-2022 (past 3 years)
**Base Year**: 2023
**Forecast Period**: 2024-28 (next 5 years)

| Product Scope |
|---|
| Tires |
| Batteries |
| Oil |
| Brake Parts |
| Filters |
| Collision Body |
| Starters and Alternators |
| Lighting |
| Bearing |
| Cooling system |

| Product Scope (continued) |
|---|
| Cooling system |
| Engine |
| Transmission |
| Steering and Suspension |
| Shaft |

# METHODOLOGY

FROST & SULLIVAN METHODOLGY IN CALCULATING MARKET SIZING COVERS PARC, REPLACEMENT RATE AND END USER PRICES MAINLY.

**BASE FIGURES**

Key Figures Considered

**REPLACEMENT FACTORS CONSIDERED**

| WEAR & TEAR | ACCIDENT | REGULAR MAINTENANCE or INSPECTION | ACCESSORIES / CONSUMER DRIVEN |
|---|---|---|---|
| Based on the part either overall vehicle parc or breakdown of the parc is considered *e.g. long haul trucks vs construction trucks* | For parts replaced due to accident are calculated based on number of accidents | Vehicle age breakdown is utilized | All parc is considered |

**MARKET SIZE**

**A*B*C**

- **Vehicle Parc**
- **Truck and Bus Breakdown**
- **Age Breakdown**

**A = Parc**

- **Number of Accidents**
- **KM of Replacement**
- **Average KMs Driven**

| KM of Wear & Tear | % of replacement out of accidents | KM of Regular Maintenance or Inspection | % of leisure purchase based on e-commerce |
|---|---|---|---|

Truck and bus average KM in a year is applied separately

**B = Replacement Rate = Average KMs Driven/ KM of Replacement**

**End User Price**

**C = Price in USD**

F&S has dedicated global aftermarket research team delivering global aftermarket intelligence delivering updated reports in annual basis with regional analysts providing a regional benchmark in North America(Canada and the United States), Europe, China, India, Latin America, and the Rest of the World.

**F&S GLOBAL AFTERMARKET INTELLIGENCE BENCHMARK**

Collected from interviews

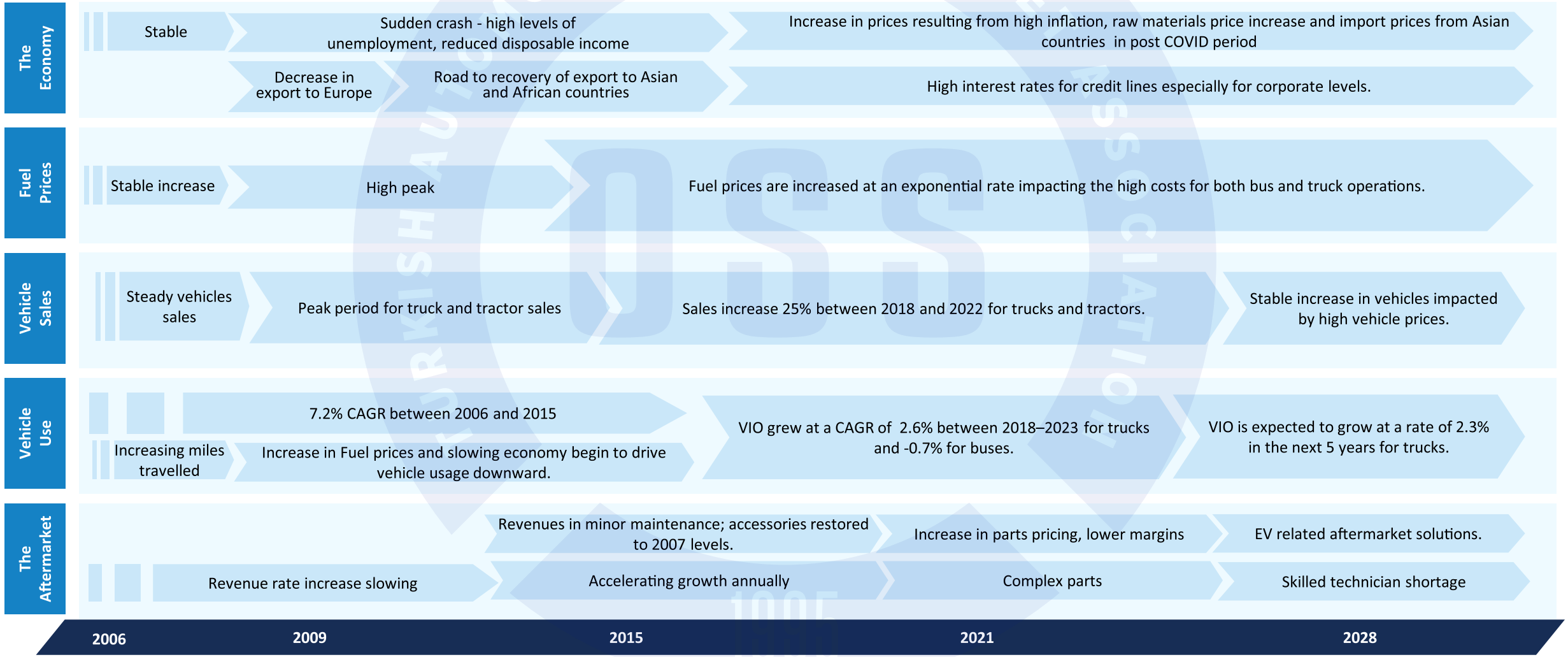
MARKET SIZE = PRODUCTION+IMPORT-EXPORT

# MARKET OVERVIEW

# TURKISH AFTERMARKET ROADMAP

INCREASING COMPLEXITY IN PARTS AND INCREASING NEED FOR TECHNICAL REQUIREMENT IS IMPACTING THE NEED FOR SKILLED TECHNICIANS.

**Automotive Aftermarket: Aftermarket Roadmap, Turkey, 2006–2028**




*Source: Frost & Sullivan Analysis*

# MAJOR TRENDS IMPACTING TURKISH AFTERMARKET (1/3)

OVERALL MEDIUM AND HEAVY COMMERCIAL VEHICLE SALES HAVE BEEN DROPPED WHILE PARC HAS GROWN AT A POSITIVE RATE IN 2023 POINTING OUT A POSITIVE IMPACT ON AFTERMARKET PARTS AND SERVICES.

**Tendency to Keep Vehicles Longer & Increasing LV Parc**

- **FY2023 was a record year for medium-heavy vehicle (bus, truck, tractor, trailer) sales, with about 70,500 units sold, a 24.8% increase compared to 2022. Buses sold: 6,895 – Trucks sold: 19,804 – Tractors sold: 24,694 - Trailer sold: 18,976**
- In **2023, used MHCV sales decreased by 3.9%,** impacting aftermarket services need to be increased even further
  - **60.5% of the used MHVs sold were older than ten years**, driving demand for automotive aftermarket solutions.
  - **49.2 million buses** and **214.9 million trucks** are exchanged as second-hand vehicles dropped 4.8% compared to 2022.
- **VIO (parc) grew by about 3.8% for MHV between 2022 and 2023**.
  - As of 2023, the number of VIO accounted for **1,170,533 medium-heavy vehicles**.
  - The latest **scrappage scheme was introduced in 2019** impacting the vehicles in operation. In 2024, another scrappage scheme is expected to be introduced.
  - The **vehicles under five years old account for 15.7% of the medium-heavy vehicle parc, indicating a significant potential for cars needing repair and maintenance from Independent Aftermarket service providers.**
- The **damages from traffic accidents increased by 7.6% in 2022 compared to 2021**.

**Financial Volatility and Price Inflation**

The continual rise in prices within the parts industry is **eroding margins in services and distribution channels**, leading to additional delays in non-critical parts replacement. Price increases are primarily driven by:

- Depreciation of the Turkish Lira,
- Escalation in raw material prices,
- Higher import taxes,
- Elevated inflation rates,
- Uncertainty stemming from Covid-19 and the global supply chain crisis.

These factors collectively contribute to increased operational costs, particularly with **utility expenses and rents experiencing** significant spikes.

*Source: TAID, TUIK, TREYDER, Frost & Sullivan Analysis*

# MAJOR TRENDS IMPACTING TURKISH AFTERMARKET (2/3)

TRACTORS ARE INTEGRAL TO TURKEY'S HEAVY-DUTY VEHICLE FLEET, FACILITATING SUBSTANTIAL ROAD TRANSPORTATION BETWEEN TURKEY AND EUROPE, BUT RECENT DIGITAL TACHOGRAPH MANDATES AND REDUCED KILOMETERS TRAVELED HAVE DECREASED MONTHLY TRIPS, WHILE THE SUSTAINABILITY IMPERATIVE.

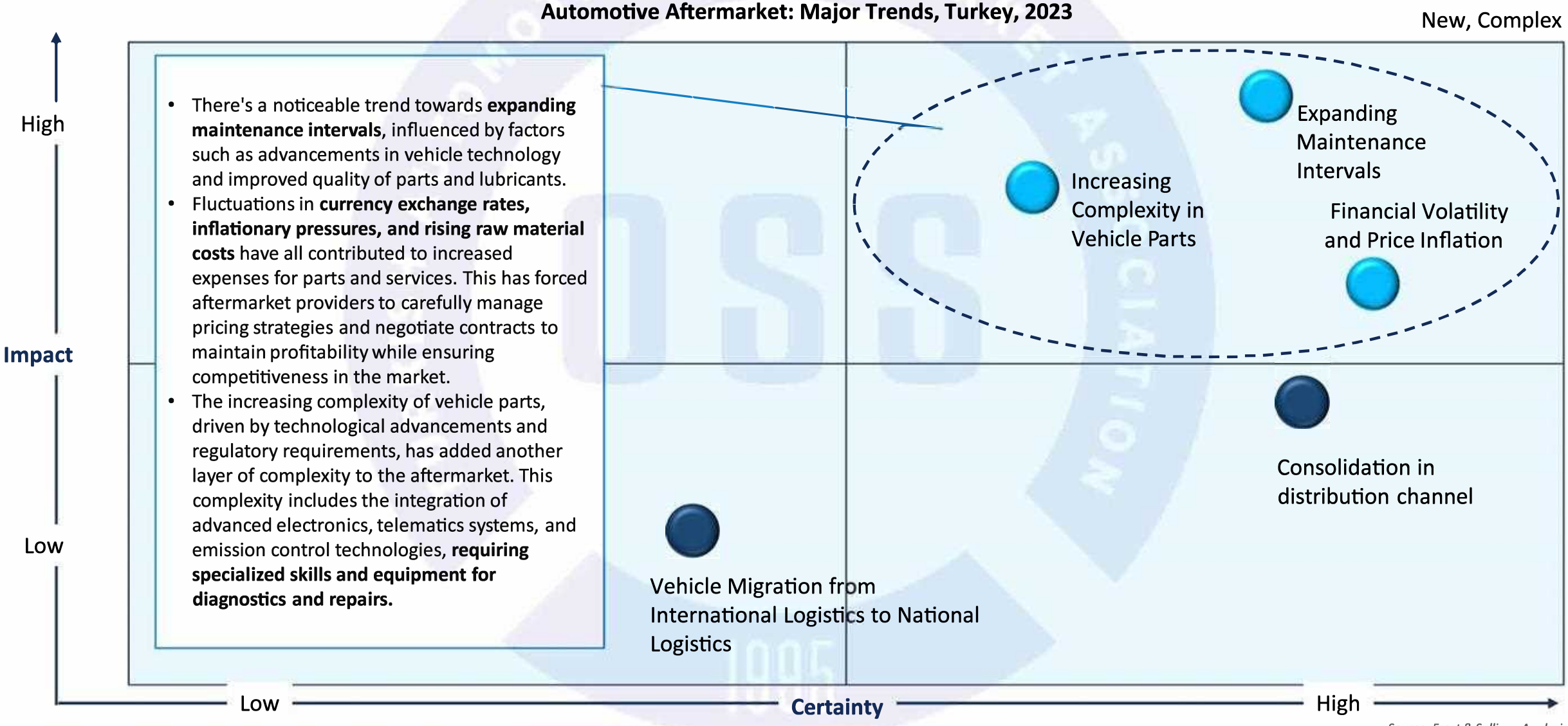
| | |
|---|---|
| **Low Retention Rate in the Special Skilled Workforce** | • The skilled worker challenge has been a significant issue similar to concerns in the light vehicle aftermarket. This has also been affected by **volatile economic conditions,** where **operational expenses rise** significantly, impacting the profitability of businesses and their ability to retain valuable service employees. These employees may choose to shift to other occupations offering higher pay. |
| **Importance of Road Transportation** | • **Tractors play a significant role in heavy duty vehicle** parc in Turkey, due to road transportation potential between Turkey and Europe, where it is possible to carry larger amounts of load between these regions.<br>• A tractor that travels to EU makes around 400,000 km every year with increased need for maintenance and services.<br>• This number of travel have been impacted per month is decreased from 2-3 rounds to 1 per month due to **digital tachograph mandates and lowering the km's travelled each year.**<br>• **Sustainability** aspect especially for vehicles travel to Europe is significant, as the large manufacturers in Europe will be reporting their CO2 offset as of 2026 and prioritize solutions with less carbon emission vehicles versus fast delivery.<br>• Logistics firms such as Mars Logistics have **ordered electric tractors** to use in short distances and fleets are slowly adopting to utilize sustainable powertrain in the upcoming years. |
| **In-house Services** | • Major fleets in Turkey like Ekol, Mars, Omsan, and Borusan have established their **own service centers** across the country for **routine maintenance and occasional mechanical repa**irs. Alternatively, they have agreements with specific shops for servicing their fleets, typically based on fixed pricing arrangements.<br>• Nevertheless, the **increased inflation and rising raw material costs** necessitate more frequent renewals of these agreements, typically occurring in cycles of 3 to 4 months.<br>• In-house services typically service vehicles up to 10 years as fleets tend to sell their vehicles after this age for local transportation. |

*Source: Frost & Sullivan Analysis*

# MAJOR TRENDS IMPACTING TURKISH AFTERMARKET (3/3)

MAINTENANCE INTERVALS IN THE COMMERCIAL VEHICLE AFTERMARKET ARE EXPANDING DUE TO IMPROVED TECHNOLOGY AND PARTS QUALITY, AIMED AT REDUCING DOWNTIME AND COSTS.

**Automotive Aftermarket: Major Trends, Turkey, 2023**



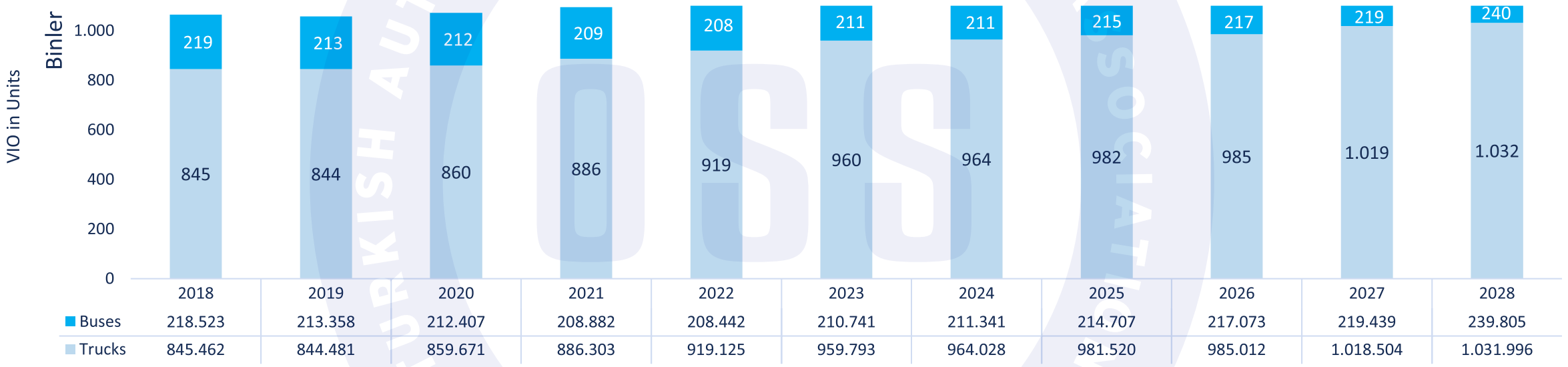

*Source: Frost & Sullivan Analysis*

# VEHICLES IN OPERATION (PARC) ANALYSIS

# TOTAL VEHICLES IN OPERATION (PARC) BY MODEL YEAR

SHARE OF BUSES ARE DECREASED IN THE OVERALL PARC FOR COMMERCIAL VEHICLES OVER THE YEARS IN TURKEY, BECOME DOMINANT BY TRUCKS.

**Automotive Aftermarket: Vehicles in Operation by Type, Turkey, 2018–2028**




| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Buses | 218.523 | 213.358 | 212.407 | 208.882 | 208.442 | 210.741 | 211.341 | 214.707 | 217.073 | 219.439 | 239.805 |
| Trucks | 845.462 | 844.481 | 859.671 | 886.303 | 919.125 | 959.793 | 964.028 | 981.520 | 985.012 | 1.018.504 | 1.031.996 |

- By the end of 2023, about 1.2 million vehicles are there for trucks (road tractor, dumper truck, tanker, garbage truck are included) and buses in total
  - 1.5% CAGR growth is expected between 2023 and 2028 for trucks.
  - 2.6% CAGR growth is expected between 2023 and 2028 for buses.

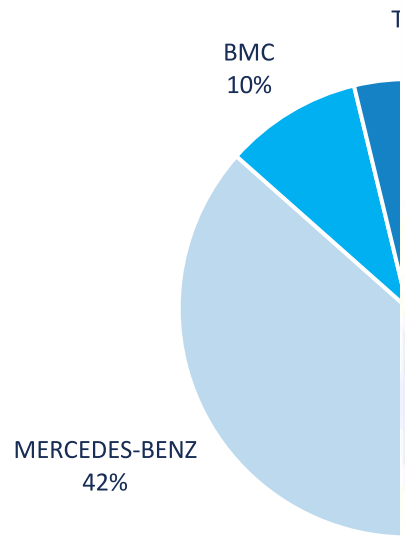
*Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis*

# TOTAL VEHICLES IN C

MERCEDES BENZ, OTOKAR ARE THE

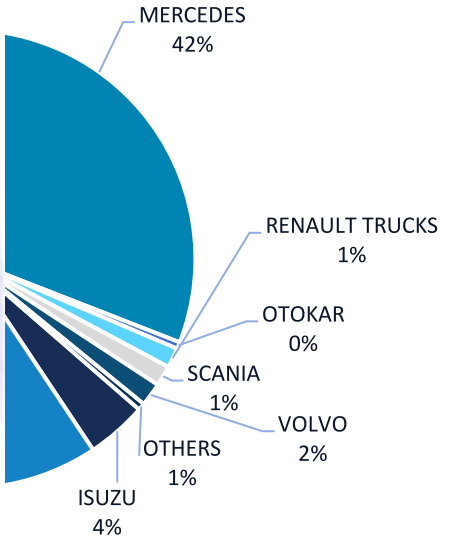
RE THE LEADERS IN TRUCKS.

## Automotive Aftermarket: Number of Bus

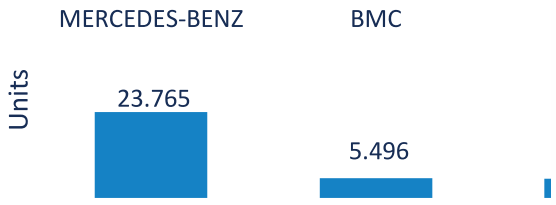



Others include: Setra, Iveco, Magirus

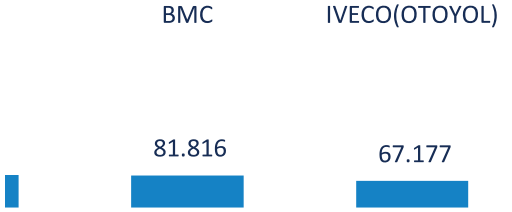
## VIO (Parc) by Brand, 2008 - 2023




## Automotive Aftermarket: Buses in VIO by




## d, 2023

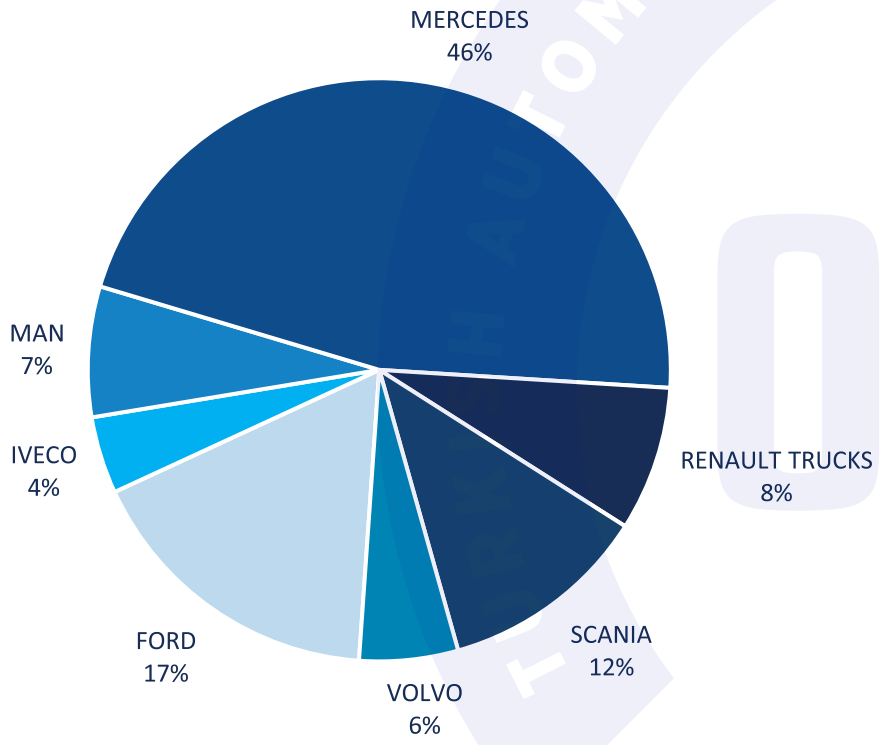



*TUIK (Turkish Statistical Institute), TAID, Frost & Sullivan Analysis*

# TOTAL VEHICLES IN OPERATION (PARC) BY BRAND IN THE LAST 12 YEARS

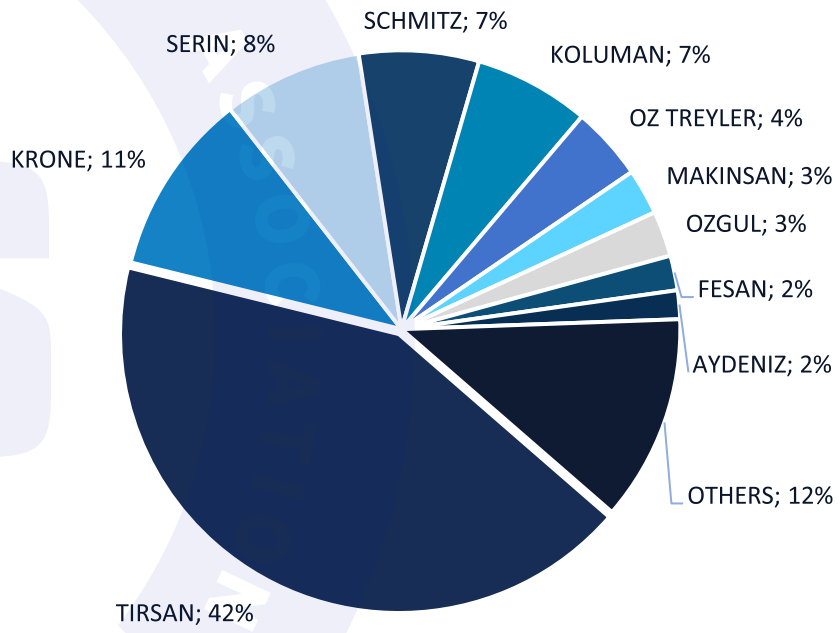
KRONE AND SERIN ARE THE LEADER BRANDS IN TRAILER, MERCEDES BENZ AND FORD ARE THE TOP BRANDS FOR TRACTORS.

## Automotive Aftermarket: Number of Road Tractors in VIO (Parc) by Brand, 2011-2023




VIO by brand is calculated from TAID new vehicle registrations each year starting from year 2011.

## Automotive Aftermarket: Number of Trailers in VIO (Parc) by Brand, 2011 - 2023



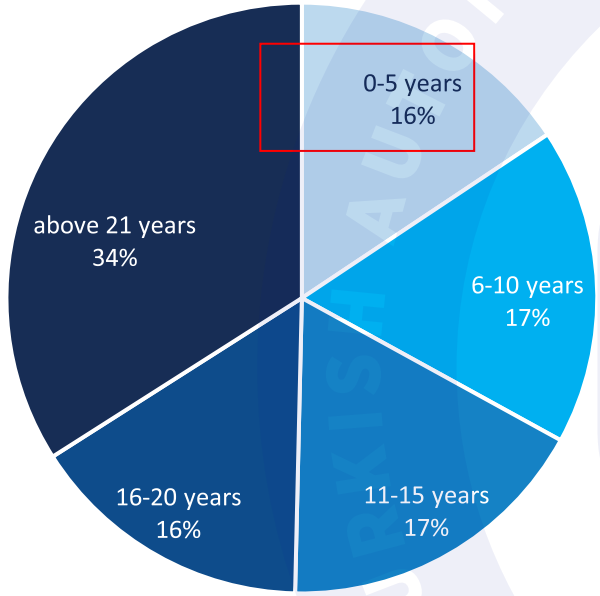

VIO by brand is calculated from TREYDER new vehicle each year starting from year 2011.

*Source: TUIK (Turkish Statistical Institute), TAID, TREYDER, Frost & Sullivan Analysis*

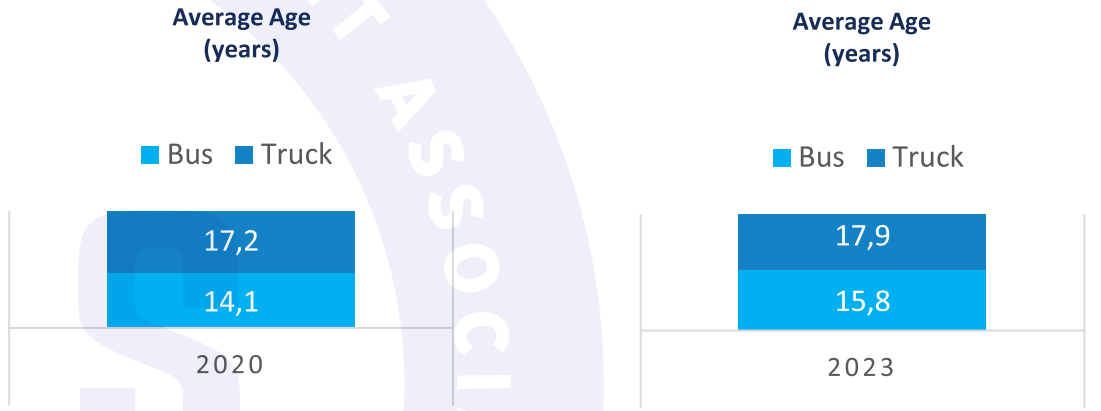
# TOTAL VEHICLES IN OPERATION (PARC) BY AGE 2023

AVERAGE AGE IS OVER 15 YEARS FOR BOTH BUSES AND TRUCKS INCREASING THE NEED FOR LONGER YEARS OF PARTS INVENTORY FOR OLDER VEHICLES.

## Automotive Aftermarket: Trucks + Buses VIO Percent Share by Age Vehicles over 3.5 Tons, Turkey, 2023




## Automotive Aftermarket: VIO by Age, Turkey, 2020 and 2023




The average vehicle age is 16.0 for trucks and buses.

The average vehicle age is 17.0 for trucks and buses.

- The average truck age is reaching almost to 18 years, increasing from 17 years compared to 2020 even though sales have been on increase due to no scrappage scheme is introduced since 2018.
- The bus average age has been increased at a faster rate than trucks from 14 years to 16 years impacted by decreasing bus sales in 2023.

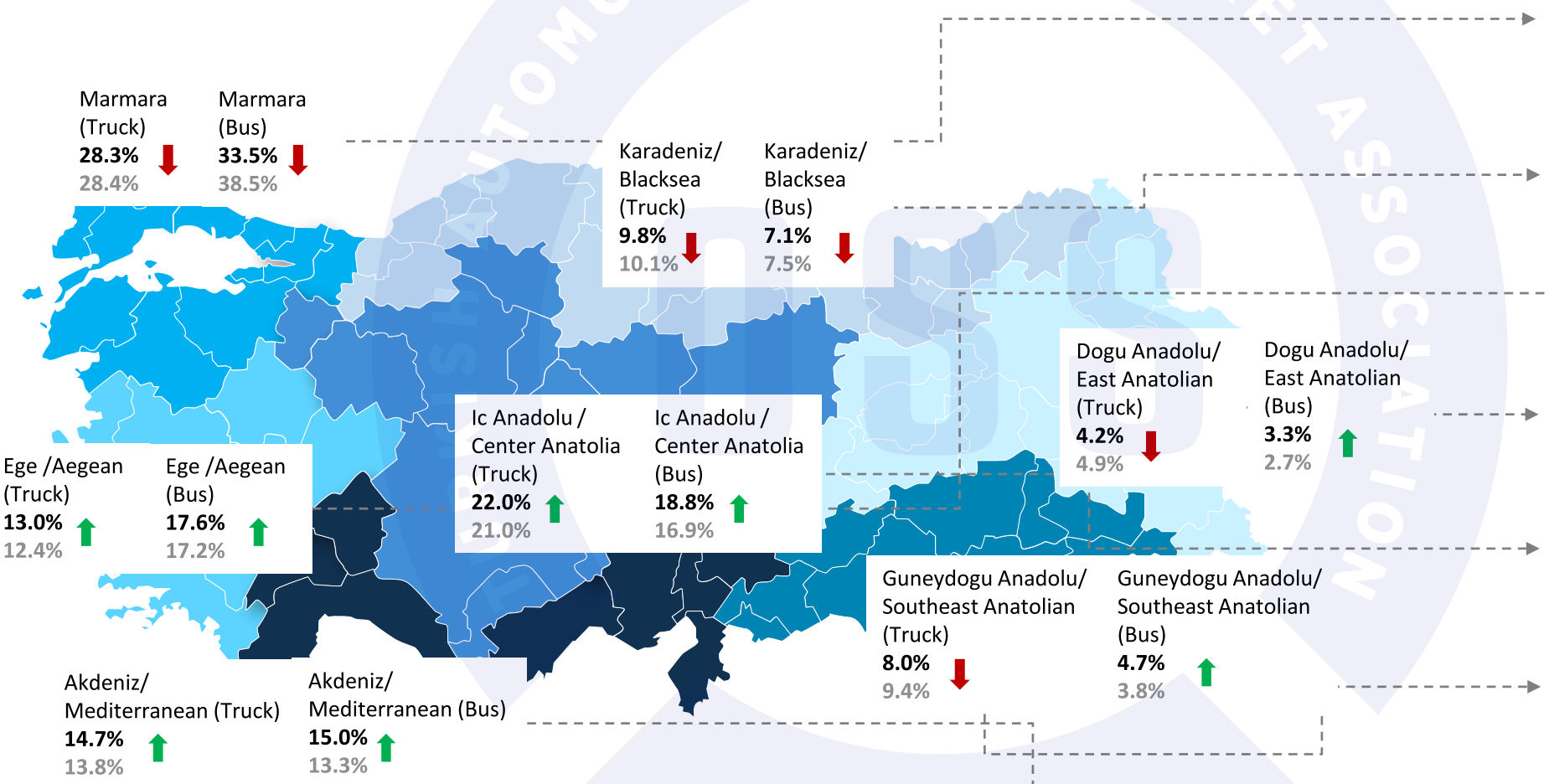
*Note: *Scrap age scheme is the encouragement of Turkish citizens to purchase a new car or van and scrap an old one.*

*Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis*

# VIO BY REGION

AEGEAN, CENTER ANATOLIA AND MEDITERRANEAN REGIONS EXPERIENCED A POSITIVE GROWTH IN NUMBER OF BOTH TRUCKS AND BUSES IN 2023 COMPARED TO 2014.

## Automotive Aftermarket: VIO by Region, Turkey, 2023

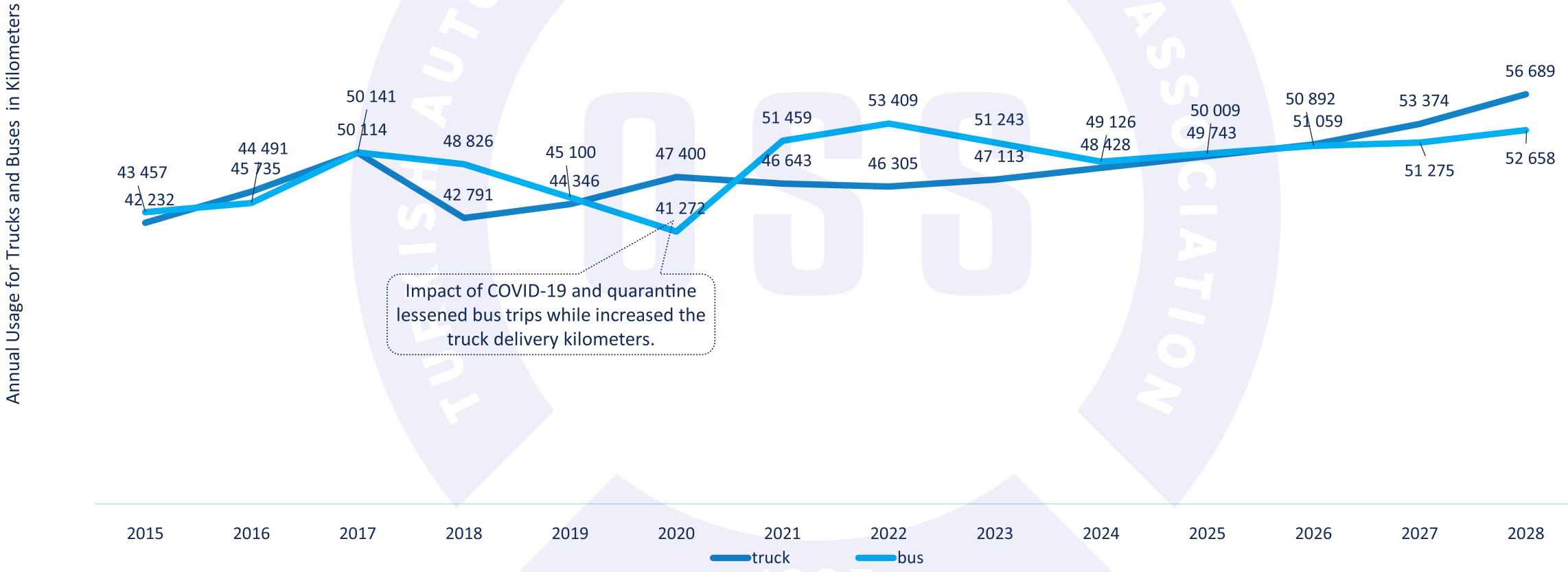



*Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis*

# AVERAGE KILOMETER DRIVEN

THE AVERAGE KILOMETERS TRAVELED BY TRUCKS AND BUSES FLUCTUATE AROUND 50,000 AND ARE ANTICIPATED TO GRADUALLY RISE AS ROAD CONDITIONS ON INTERCITY ROUTES IMPROVE.

## Automotive Aftermarket: Average Kilometer Driven by Bus and Trucks, Turkey, 2015–2028

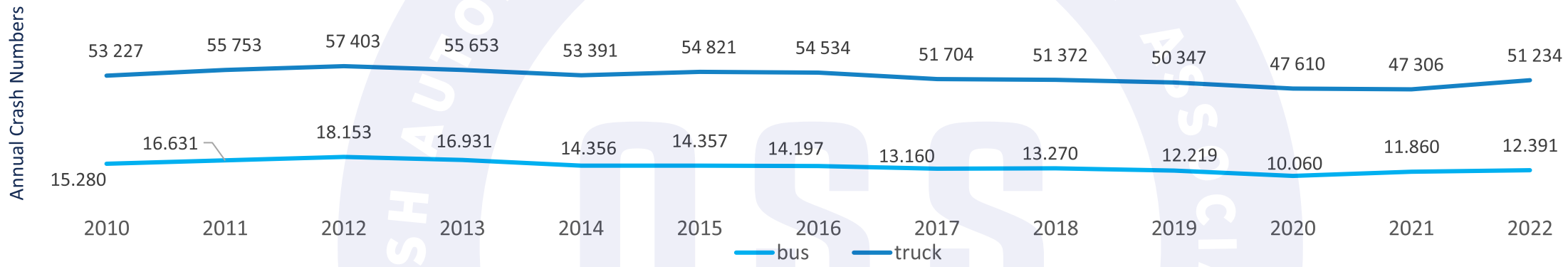


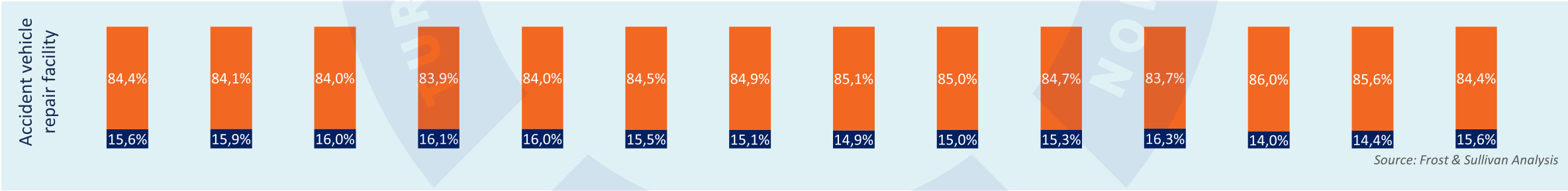

*Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis*

# ANNUAL CRASH NUMBERS & REPAIR LOCATION

AS OF 2022, 63,625 TRUCKS AND BUSES HAVE EXPERIENCED ACCIDENTS AT A CONSISTENT RATE, LEADING TO STABLE DEMAND FOR REPAIR FACILITIES.

## Automotive Aftermarket: Annual Crash Numbers vs. Repair facility, Turkey, 2010–2022




*Source: Frost & Sullivan Analysis*

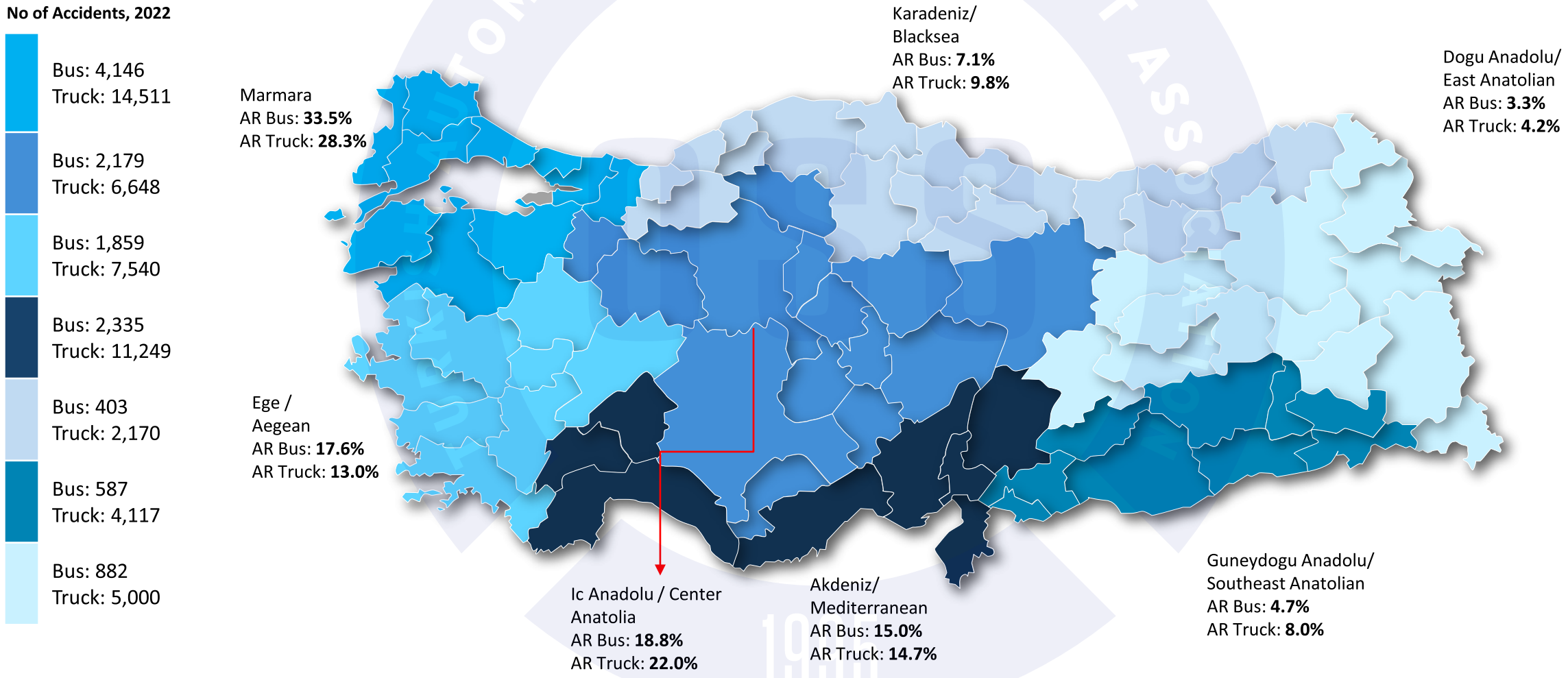
The accidents that are not reported to insurance companies are not included

*Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis*

# ANNUAL CRASH NUMBERS BY REGION

MARMARA AND CENTER ANATOLIA REGION ARE SIGNIFICANT IN ACCIDENTS DUE TO HIGH VEHICLE PARC, DRIVER BEHAVIOR AND ROAD CONDITIONS.

## Automotive Aftermarket: Annual Crash Numbers, Turkey, 2022




*AR: Accident Ratio*

*Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis*

# AFTERMARKET PARTS MARKET ANALYSIS

# TOTAL TURKISH AUTOMOTIVE AFTERMARKET—MANUFACTURER-LEVEL REPLACEMENT PARTS REVENUE (1/2)

THE TURKISH MHV AFTERMARKET, EXPECTED TO GROW FROM $2.4 BILLION IN 2023 TO $2.9 BILLION BY 2028 AT A 3.7% CAGR, WILL SEE SIGNIFICANT GROWTH IN TIRES, FILTERS, AND STEERING AND SUSPENSION COMPONENTS DUE TO INCREASED VEHICLE USAGE.

**Automotive Aftermarket: Medium and Heavy Commercial Vehicles Revenue by Category, Turkey, 2023–2028**

| | 2023 Revenue ($ Million) | 2028 Revenue ($ Million) | CAGR (2023–2028) |
|---|---|---|---|
| Tires | 625.2 | 821.7 | 5.6% |
| Batteries | 111.1 | 127.0 | 2.7% |
| Oil | 303.9 | 324.8 | 1.3% |
| Brake Parts | 149.1 | 173.3 | 3.1% |
| Filters | 174.5 | 221.1 | 4.8% |
| Collision Body | 155.7 | 180.8 | 3.0% |
| Starters and Alternators | 63.7 | 67.3 | 1.1% |
| Lighting | 70.4 | 82.5 | 3.2% |
| Engine Components | 126.8 | 143.3 | 2.5% |
| Transmission Components | 82.0 | 92.8 | 2.5% |
| Cooling system | 20.8 | 23.0 | 2.0% |
| Wheel Bearing | 33.6 | 38.9 | 3.0% |
| Steering and Suspension | 147.5 | 177.9 | 3.8% |
| Shaft | 20.8 | 22.4 | 1.5% |
| Others | 296.5 | 366.6 | 4.3% |
| **Total** | **2,382** | **2,863** | **3.8%** |

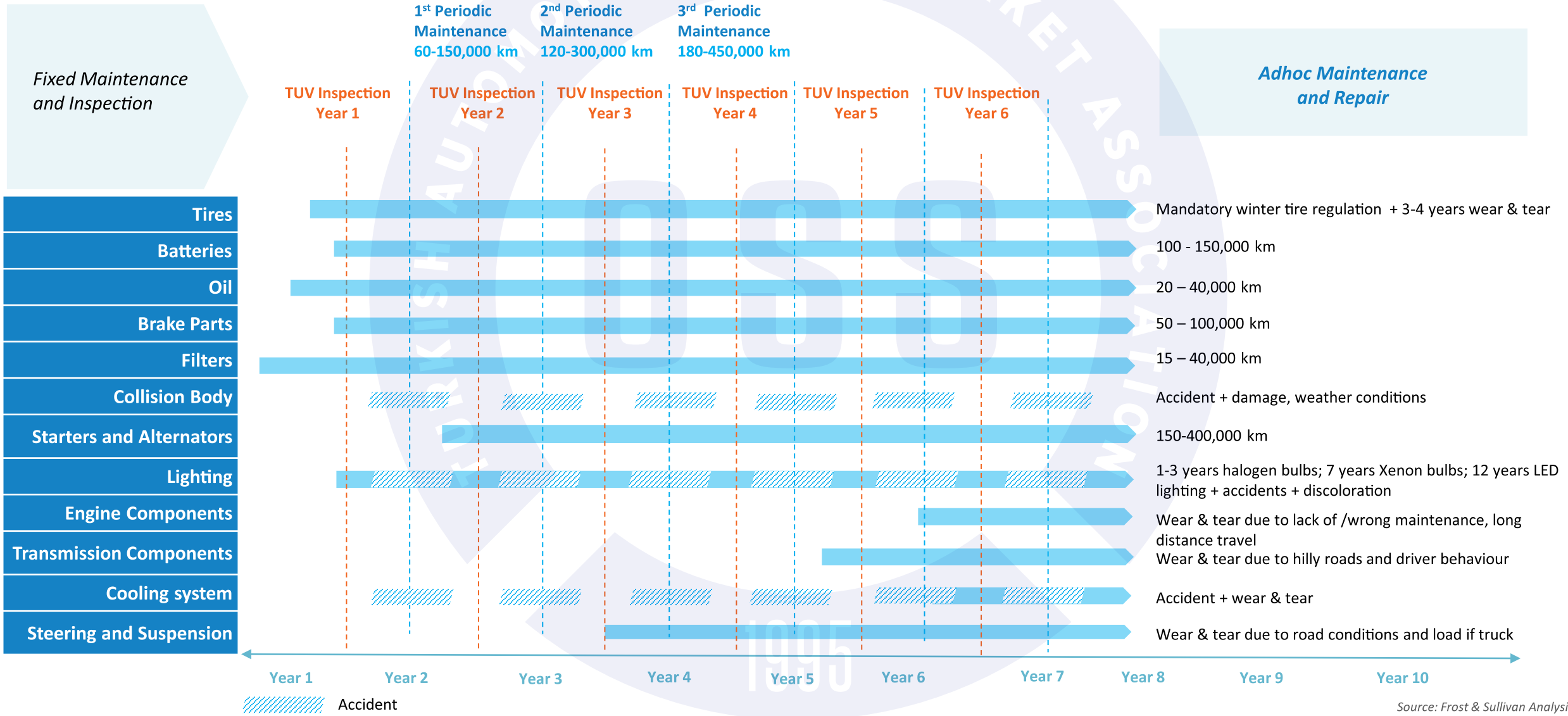
- The Turkish medium and heavy commercial vehicles aftermarket generated $2.4 billion in revenue in 2023. It is expected to grow at a compound annual growth rate (CAGR) of 3.8%, reaching $2.9 billion by 2028.
- Tires, oil, and filters constitute the top three revenue-generating parts in the market. Moving forward, the highest growth is anticipated in the sectors of tires, filters, and steering and suspension components.
- As the vehicle fleet continues to grow at a stable rate, the kilometers driven are also increasing. Consequently, wear and tear on parts is expected to rise such as tires and suspension, particularly those related to safety and emissions such as filters, as Turkey follows EU norms.
- International road logistics companies and the growing e-commerce sector play a significant role in Turkey, where regular maintenance and inspections are strictly followed. However, after around 10 years of service, these vehicles are sold to the local market in various regions, where most replacement and maintenance activities tend to be delayed.

Revenues are calculated based on retail/ end-customer net price analysis.

*Source: Frost & Sullivan Analysis*

# REPLACEMENT RATE OF PARTS IN TURKISH AFTERMARKET

THE PURPOSE OF THE VEHICLE GREATLY INFLUENCES THE REPLACEMENT NEEDS OF PARTS, RESULTING IN A WIDE RANGE OF KILOMETERS FOR MAINTENANCE INTERVALS, DEPENDING ON WHETHER IT IS A CONSTRUCTION TRUCK, A LONG-HAUL VEHICLE, OR A TRACTOR.




*Source: Frost & Sullivan Analysis*

# REPLACEMENT RATE OF PARTS IN TURKISH AFTERMARKET

DEPENDING ON THE PURPOSE OF THE MHV FACTORS SUCH AS HIGH MILEAGE, FUEL EFFICIENCY, PASSENGER COMFORT AND ROAD CONDITIONS PLAY AN IMPORTANT ROLE FOR THE NEED FOR REPLACEMENT OF DIFFERENT PARTS AND SYSTEMS.

## Construction Vehicles

Frequent start stops

Rough terrains, unpaved roads, and construction sites

Heavy loads, frequent gear changes

More frequent servicing and replacement:

**Transmission** (clutches, gearboxes)
**Drivetrain** (U-joints, differentials, axles)
**Suspension (**leaf springs, shock absorbers, and bushings)
**Tires**

## Long Haul Vehicles

Consistent Speed and smoother road conditions

Long distances, high kilometers, long hours of operation

More frequent servicing and replacement

**Brakes**
**Tires**
**Engine**
**Cooling**

**Electronics and Telematics**: Increasingly important for fleet management, diagnostics, and compliance with regulations.

**Trailers: Tires and Axles**: Regular maintenance and replacement due to wear and tear from carrying heavy loads.

**Refrigeration Units**: For refrigerated trailers, the cooling systems require regular checks and maintenance to ensure they function properly.

## Buses

Frequent stopping and starting, lower ground clearance

The need for smooth and efficient passenger transport

Traffic and urban routes

More frequent servicing and replacement

**Brakes** (brake pads and shoes, rotors and drums)
**Tires** (rotation and alignment)
**Suspension** (air springs, shock absorbers)
**Transmission** (fluid and filters)

*Source: Frost & Sullivan Analysis*

# TOP PARTS/ SYSTEM SUPPLIERS IN TURKEY

DUE TO OLDER VEHICLE AGE FOR BUSES AND TRUCKS THE PARTS SUPPLIER VARIETY IS CONSIDERABLY HIGH IN TURKEY.

| Tires | Batteries | Oil | Brake Parts | Filters | Starters and Alternators | Lighting | Wheel Bearing | Cooling system | Engine | Transmission | Steering and Suspension | Shafts |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brisa | Esan | BP Castrol | Beser Balata | Asas | Bosch | Ayfar | NTN-SNR | Kale | Borgwarner | Donmez | ACV | Meritor |
| Continental | Inci | Opet Fuchs | Eku Fren | Fil | Lucas Elektrik | Depo | Schaeffler | Mahle | Cummins | Kacmazlar | Ditas | Tirsan |
| Goodyear | Mutlu | Petrol Ofisi | Eren | Hengst | Mahle | Hella | SKF | Nissens | Federal Mogul | Schaeffler | Maysan Mando | |
| Hankook | Varta | Shell | Ferodo | Mahle | Valeo | Osram | Timken | | Garrett | Valeo | Monroe | |
| Petlas | Yigit | Total | Knorr-Bremse | Mann | | Valeo | | | Mahle | ZF | Vibracoustic | |
| Pirelli | | | Textar | Racor/ Parker | | | | | KS | | ZF/ Sachs/ Lemforder | |
| Michelin | | | | Sampiyon | | | | | | | | |

Suppliers are listed alphabetically.

*Source: Frost & Sullivan Analysis*

# AFTERMARKET SERVICE ANALYSIS

# TURKISH AUTOMOTIVE AFTERMARKET SERVICES INDUSTRY

IN THE MEDIUM AND HEAVY COMMERCIAL VEHICLE SEGMENT IN TURKEY, INDEPENDENT GARAGES AND SPECIALIZED WORKSHOPS ARE ESSENTIAL FOR PROVIDING ACCESSIBLE, COST-EFFECTIVE REPAIRS, PARTICULARLY AS THESE VEHICLES AGE AND TRAVEL LONG DISTANCES.

There are 5 groups of aftermarket services in the independent side with OE partners, specialized workshops and individual garages with few examples of franchise workshops.

| | |
|---|---|
| **Independent Service Partners** | • In the medium and heavy commercial vehicle segment, especially for mechanical parts, OEMs have established independent service partners throughout Turkey. These partners maintain the vehicles using trusted parts and offer guarantees. While many independent shops display OE logos, these logos do not always indicate actual partnerships, leading to frequent misunderstandings. These services can also have agreements with multiple OEMs. |
| **Specialized Workshops** | • There are specialized workshops, operating almost like franchises, that focus on remanufacturing engines or transmissions, such as GMY and Birlesik Motor Yenileme. These workshops provide services across Turkey, which is crucial for breakdowns. Vehicles traveling long distances can access nearby shops for repairs, avoiding the costly towing expenses associated with medium and heavy commercial vehicles. |
| **Individual Service Centers** | • Individual garages play a crucial role in maintaining medium and heavy vehicles (MHVs), especially as the average age of these vehicles approaches 17 years. The need for cost-effective wear and tear repairs is vital, and the extensive network of these garages ensures accessibility and convenience for owners. |
| **Franchise Workshops** | • Even though not very common, well-known franchise services such as Bosch Service provide network for MHV segment. |
| **In-house Service Facilities** | • In Turkey, large fleets in the logistics sector often have in-house services for regular maintenance. These services typically include routine tasks such as oil changes and tire replacements, as well as some mechanical work like brake pad replacements. |

*Source: Frost & Sullivan Analysis*

# SERVICE CENTERS BY TYPE

INDEPENDENT AND OEM-PARTNERED SERVICE CENTERS WILL REMAIN CRUCIAL FOR MINIMIZING REPAIR DOWNTIME.

**Automotive Aftermarket: Service Centers by Type, Turkey, 2023 and 2028**

| Repair Location | 2023 Locations | 2028 Locations |
|---|---|---|
| Vehicle Dealers | Approx. 350 | Approx. 378 |
| Individual Service Centers | Approx. 4,600 | Approx. 4,900 |
| Independent Service Partners | Approx. 570 | Approx. 620 |
| Specialized Workshops | Approx. 230 | Approx. 280 |

**Automotive Aftermarket: Number of Damage Repair Facilities, Turkey, 2018-2028**

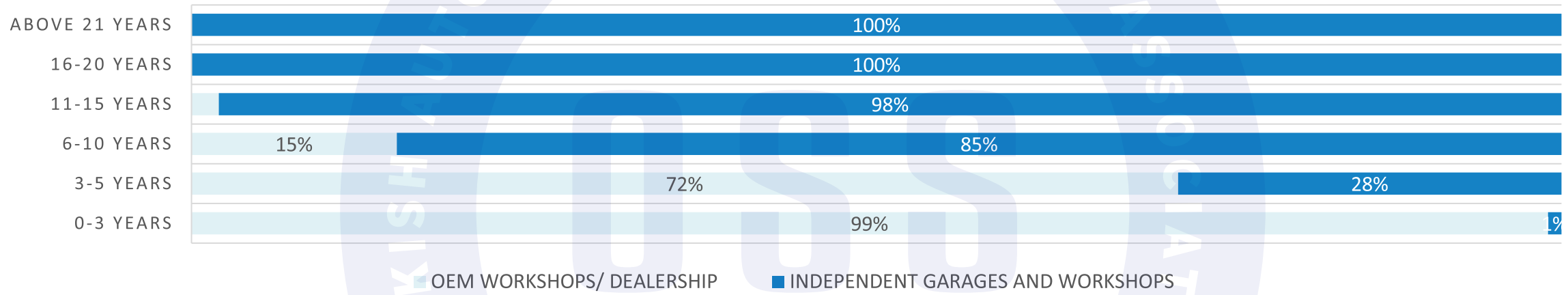

- Evergrowing MCV and HCV sales since 2019 despite Covid period shows the need for more dealers and services in the country in the upcoming years.
- While independent service centers remain dominant, OEM-partnered service centers will continue to offer trust and accessibility to drivers and companies, where minimizing downtime for repairs is critically important.
- Along with advancements in sensor technology, smart braking systems, and other safety features such as lane-keeping assistance, collision avoidance systems, adaptive cruise control, and advanced driver assistance systems (ADAS), the need for accident repair centers is expected to decrease in the coming years. These technologies work together to enhance vehicle safety, reducing the likelihood of accidents and, consequently, the demand for extensive repair services.

*Source: OYDER, Frost & Sullivan Analysis*

# COMPETITIVE EVALUATION OF THE SERVICE INDUSTRY

DUE TO WARRANTY TERMS AND ECONOMIC FACTORS, VEHICLES UP TO 5 YEARS OLD TEND TO USE OE SERVICES, WHILE POST-WARRANTY REPAIRS AND ACCIDENTS ARE INCREASINGLY HANDLED BY INDEPENDENT AFTERMARKET (IAM) SERVICES.

**Automotive Aftermarket: Use of OES vs IAM According to Vehicle Age, Turkey, 2023**



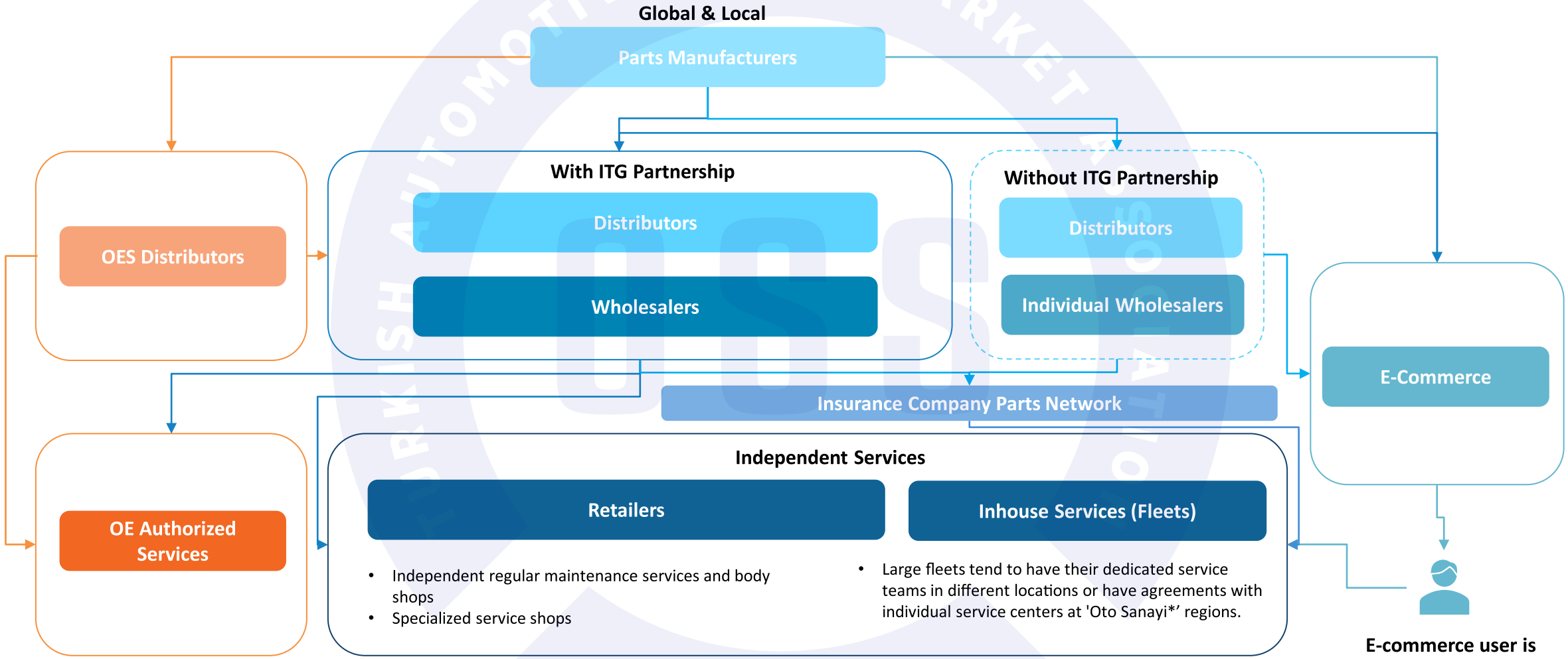

- The general warranty period for different OE brands ranges from 1 to 5 years. Typically, an additional 2 years is provided to those with a 1-year manufacturer warranty if service and maintenance are conducted at the OE service center. As a result, vehicles up to 5 years old, which constitute 16% of the market, predominantly utilize OE services.
- New vehicles, often bought by large fleets with agreements for annual purchases, are usually purchased rather than leased in Turkey and sold between 5 to 10 years. To maintain their value, these vehicles are serviced at OE centers. However, recent price increases and inflation are driving a shift towards Independent Aftermarket (IAM) services.
- Post-warranty mechanical breakdowns often lead vehicles to specialized workshops.
- For accidents, insurance companies generally direct vehicles to IAM services within their network.

*Source: Frost & Sullivan Analysis*

# DISTRIBUTION CHANNEL ANALYSIS

# TURKISH AFTERMARKET DISTRIBUTION STRUCTURE

THE MHV AFTERMARKET DISTRIBUTION CHANNEL IS MORE CONSOLIDATED AMONG DISTRIBUTORS.




*Source: Frost & Sullivan Analysis*

# TOP TURKISH AFTERMARKET PARTS INTERNATIONAL TRADING GROUPS

THERE ARE FIVE DIFFERENT ITG'S THAT PROVIDES PARTS TO MEDIUM AND HEAVY COMMERCIAL VEHICLE DISTRIBUTION NETWORK IN TURKEY WITH STRONG LOCAL PARTNERS.

**Automotive Aftermarket: International Trading Groups, Turkey, 2023**

| International Trading Groups (ITG) | Number of Business Partners in Turkey | Year of ITG Partnerships in Turkey | Vehicle Scope | Member Distributors (examples) |
|---|---|---|---|---|
| **AD International / AD Ekol** | 10 shareholders & 5 members | 2017 | • Light vehicles<br>• Commercial vehicles | Ardic, Arici |
| **ATR** | 2 shareholders | 2018, 2003 | • Light vehicles<br>• Commercial vehicles | Martas, Rotas |
| **Groupauto International / Grup Oto** | 24 business partners<br>(21 of them are LVs) | 1992 | • Light vehicles<br>• Commercial vehicles | Hamle, Tekoto |
| **Nexus International & Nexus Eurosia** | 1 shareholder & 2 members | 2014 | • Light vehicles<br>• Commercial vehicles | Dinamik, Simpar |
| **Temot / Tatcom** | 8 shareholders & 2 members | 2013 | • Light vehicles<br>• Commercial vehicles | Donmez, Genel Oto, Hidirusta, Motor Asin |

ITG's are listed alphabetically.

*Source: Frost & Sullivan Analysis*

# TOP TURKISH AFTERMARKET PARTS KEY DISTRIBUTORS

LOCAL DISTRIBUTORS MAINTAIN A STRONG POSITION IN DELIVERING PARTS TO ALL AREAS IN TURKEY, SUPPORTED BY A WELL-CONNECTED AND DEDICATED SALES TEAM.

**Automotive Aftermarket: Key Distributors, Turkey, 2023**

| Distributor Group | Year of Founding | Number of Logistics Centers | International Trading Groups (ITG) | Year of ITG Partnership | Vehicle Scope |
|---|---|---|---|---|---|
| Ardic | 1975 | 5 | AD International / AD Ekol | 2019 | • Light vehicles<br>• Commercial vehicles |
| Dinamik | 1986 | 18 | Nexus International & Nexus Eurosia | 2014 | • Light vehicles<br>• Commercial vehicles |
| Donmez | 1976 | 3 | Temot / Tatcom | 2014 | • Light vehicles<br>• Commercial vehicles |
| Genel Oto | 1954 | 7 | Temot / Tatcom | 2014 | • Light vehicles<br>• Commercial vehicles |
| Hamle Otomotiv | 1979 | 3 | Groupauto International / Grup Oto | 2014 | • Light vehicles<br>• Commercial vehicles |
| Hidirusta | 1978 | 8 | Temot / Tatcom | 2013 | • Light vehicles<br>• Commercial vehicles |
| Martas | 1980 | 11 | ATR | 2018 | • Light vehicles<br>• Commercial vehicles |
| Motor Asin | 1971 | 6 | Temot / Tatcom | 2014 | • Light vehicles<br>• Commercial vehicles |
| Silkar Endas | 1962 | 6 | Independent | Not applicable | • Commercial vehicles |

Distributors are listed alphabetically.

*Source: Frost & Sullivan Analysis*

# COMPETITIVE EVALUATION OF DISTRIBUTION

KEY FACTORS DRIVING COMPETITION INCLUDE THE ABILITY TO QUICKLY DELIVER HIGH-QUALITY PARTS, THE DEVELOPMENT OF USER-FRIENDLY E-COMMERCE PLATFORMS, THE INTEGRATION OF ADVANCED TECHNOLOGIES, AND THE ADOPTION OF ECO-FRIENDLY PRACTICES TO ALIGN WITH STRINGENT REGULATIONS.

**Lifecycle**

While there are five different ITG partnerships with multiple local distributors for medium and heavy-duty vehicles, the OE brands also have significant partnerships with the same distributors in Turkey. The OE and independent distribution channels are intertwined, ensuring access to quality parts at all levels of the distribution channel in a fast-paced manner. This is crucial as obtaining parts quickly is essential due to the critical impact of commercial vehicle downtime on operational costs. It is common for parts distributor companies to expand into their authorized vehicle dealership to capture a significant share of the vehicle life cycle.

**Expansion**

E-commerce capabilities have also been developed by distributors, allowing detailed inventory searches according to vehicle model and type through user-friendly platforms designed for drivers, fleet managers, and service personnel. Mobile services to fleets are also evolving to provide simple services in addition to roadside assistance, particularly for medium commercial vehicles used for in-city deliveries of goods and cargo.

**Diversity**

While the Turkish MHV sales are dominated by heavy commercial vehicles, accounting for 86% in 2023, the growth rate for medium commercial vehicles is significant due to the online shopping and e-commerce boom experienced since the Covid period. This may result in increased parts variety as different vehicles enter the market. The integration of advanced technologies such as telematics and IoT (Internet of Things) in medium and heavy vehicles is enhancing the efficiency of fleet management.

**Sustainability**

There is a growing emphasis on sustainability within the logistics sector. Distributors and fleet operators are increasingly adopting eco-friendly practices and investing in vehicles with lower emissions especially for logistics companies who travel to Europe where stricter regulations or requests from clients to report their CO2 consumption as of 2026. These will impact the parts variety as well as creative solutions to meet with the demand. Large fleets already started ordering electric trucks such as Mars Logistics, DFDS.

*Source: Frost & Sullivan Analysis*

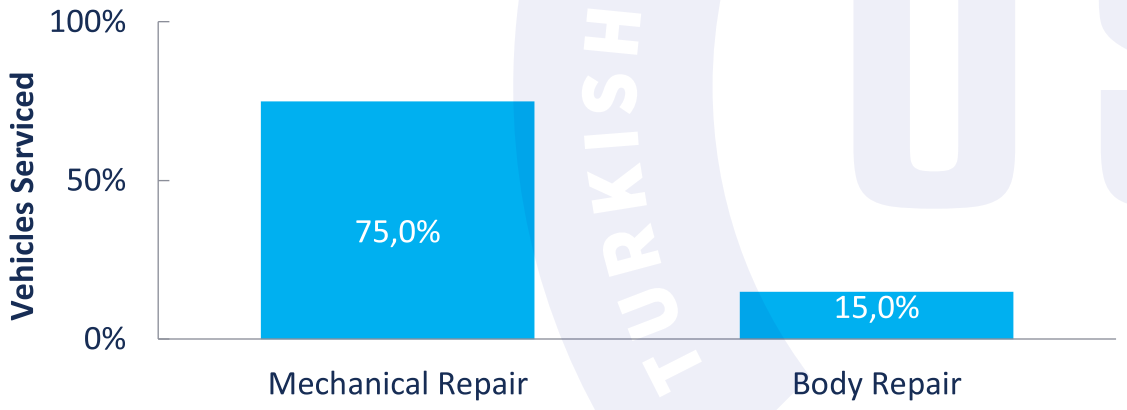
# OES CHANNEL ANALYSIS

# OES CHANNEL TRENDS

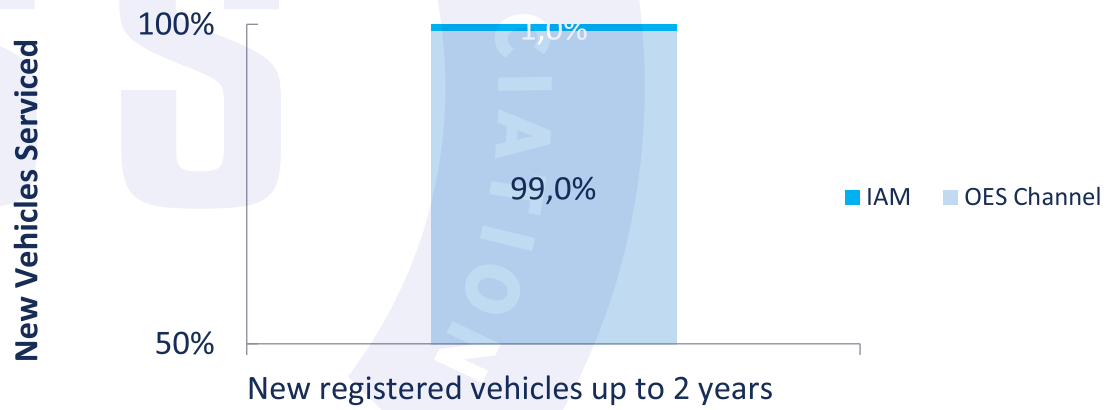
MECHANICAL REPAIR IS FAVORED MORE AT THE OE SERVICES DUE TO SERVICE QUALITY AND CAPABILITY THAT CAN LEAD TO LONGER YEARS WITHOUT FURTHER BREAKDOWNS.

- For most body repairs, independent service facilities are preferred due to their more economical prices. In case of accidents, these facilities are often recommended by insurance companies. Since leasing is not very popular for heavy vehicles, the use of OE parts is dependent on the owner's decision, as there is no binding contract for 3-4 years.
- OE services are trusted more in case of a mechanic part replacement or maintenance as the MHV are very complex and require special facilities with the right service equipment and tools. For some brands OE services are not well spread around Turkey, fleets are considerate of accessibility to services.

**Automotive Aftermarket: Percent of Vehicles Serviced at OES Channel According to Type of Services Performed, Turkey, 2023**




**Automotive Aftermarket: Percent of New Vehicles Serviced According to Type of Channel, Turkey, 2023**




- Mechanical repair involves battery, tire, brake, engine components, exhaust components.
- Body repair: collision repair, damaged panels, window replacement, bumper replacement, welding, dent repair including window.

- New trucks and buses typically rely on the OE service network for maintenance and repairs. However, in rare instances where a specific accident or breakdown occurs in a remote location, especially during international travel, and an OE service is not available, alternative arrangements may be necessary.

*Source: Frost & Sullivan Analysis*

# NEW CAR WARRANTIES {FROM OEMS)

MEDIUM AND HEAVY VEHICLES HAVE DIFFERENT WARRANTY PERIODS BASED ON THE BRAND. ISUZU LEAD WITH WARRANTIES EXTENDING UP TO 5 YEARS.

| Company | Exampleof Regional Authorized Chain Dealers & Services | Numberof Dealers | Numberof Services Points | Manufacturer Warranty Offer |
|---|---|---|---|---|
| Mercedes | Birollar, Koluman, Mengerler | 29 | 48 | For 1 year, unlimitedkm.<br>2 years of additionalwarranty for customers if all maintenanceand repairs of the vehicle, including bodywork, are carried out regularly at Mercedes-Benz authorized services duringthe first 2 years. |
| Ford | Atamar, Büyükkarcı, Çetaş, Otokoç | 24 | 24 | For 2 years, unlimitedkm.<br>Option to extend warranty by one year. |
| Scania | Doğuş Otomotiv, Tırsan | 17 | 17 | 1 year of warranty.<br>Optional packagesof Scania Professional, Professional Extra, Premiumand Premium Extra that offer extendedrepair for engine,transmissionand chassis. |
| Renault Trucks | Koçaslanlar, Özmutlubaş | 15 | 15 | 2 years of warranty. |
| MAN | Lokman Koçaslan, Mapar | 14 | 34 | For 1 year, unlimited km.<br>The chassis parts (engine, engine,driven axles) defined by MAN have 2 years unlimitedkm warranty. |
| Iveco | Genpar, Kılıçlar,Öz Gözde | 21 | 43 | For 2 years/200,000km. |
| Mitsubishi | İnalllar, Musluoğlu, Şeref Oto, Tekbaş | 12 | 48 | 5 years/100,000km or 2 years/unlimited km. 12 years anti-perforation warranty. |
| Otokar | Acamar, Fırat Oto, Somaylar | 26 | 70 | For 2 years, unlimited km. |
| Isuzu | Asal, Çetaş, Öztopraklar | 36 | 90 | For 2 years, unlimitedkm. D-Max vehicles have 5 years/100,000 km warranty |

Source: Frost & Su/livanAnalysis

# OEM WARRANTY CONDITIONS

MANUFACTURER WARRANTIES PROVIDE COMPREHENSIVE COVERAGE FOR DEFECTS, WHILE SPECIFIC WARRANTIES FOR PAINT, ANTI-PERFORATION, AND HIGH VOLTAGE BATTERIES OFFER TARGETED PROTECTIONS, HIGHLIGHTING THE EVOLVING NEEDS AND OPPORTUNITIES IN THE AFTERMARKET INDUSTRY.

| Warranty Type | Coverage | Impact on the Aftermarket |
|---|---|---|
| **Manufacturer warranty** | • Covers issues arising from defects in materials, manufacturing, or workmanship. It may include both parts and labor costs for repairs<br>• Generally for 2 years dependent on the brand, unlimited km. | • OE Authorized services dominates the market during warranty period.<br>• Electric vehicles will have longer manufacturer warranty period. |
| **Paint warranty** | • Typically ensures that the paint job is free from problems such as peeling, blistering, cracking, or excessive fading due to manufacturing defects or poor workmanship<br>• Generally for 2 years, unlimited km. | • Paint is one of the most frequent aftermarket mini repairs, performed at both OE and independent shops. However, this warranty does not cover damages or defects related to accidents. |
| **Anti – perforation warranty** | • Repair or replacement of components that have deteriorated due to defects in manufacturing, materials, or workmanship<br>• Generally for 5 years, unlimited km. | • A long 5-year coverage reduces the early demand for aftermarket rust repairs and treatments. Aftermarket businesses are focusing on offering anti-rust treatments and preventative services. |
| **High Voltage Battery warranty (For EVs)** | • This warranty typically ensures that the battery will retain a certain level of capacity and performance for a specified period or mileage<br>• 8-year and up to 250,000km battery warranty. | • Due to long warranty coverage, need for aftermarket battery replacements and major repairs are significantly delayed.<br>• The complexity and high cost of EV batteries can limit the number of aftermarket businesses capable of offering competitive services.<br>• After the warranty period, there would be a significant market not only for battery replacements and repairs but also for recycling services. |

*Source: Frost & Sullivan Analysis*

# WARRANTIES IN THE AFTERMARKET (CONTINUED)

EXTENDED WARRANTIES DELAY THE NEED FOR AFTERMARKET SERVICES BY KEEPING VEHICLES UNDER MANUFACTURER CARE LONGER, WHILE SHORT-TERM WARRANTIES DRIVE EARLIER DEMAND FOR INDEPENDENT REPAIR AND MAINTENANCE.

| Warranty Type | Coverage | Impact on the Aftermarket |
|---|---|---|
| **Extended service warranty** | • Additional 1 to 6 years warranty depending on the brand.<br>• (Ex. Isuzu: Additional 1 year, MAN: Options up to 72 months or 1 million km) | • Delaying the need for independent repairs and maintenance services by keeping the vehicles at the OE services for longer periods.<br>• However, once these extended warranties expire, there is likely to be a surge in demand for aftermarket services as vehicle owners seek cost-effective repair. |
| **Short duration warranty** | • 1 year, unlimited km or 2 years, unlimited km depending on the brand. | • Since these warranties cover a relatively brief period, vehicle owners transition to using independent repair and maintenance services sooner.<br>• This creates an earlier demand for aftermarket services, providing opportunities for aftermarket businesses |

Short duration warranty is typically provided for customers who already utilize OE services 1-2 years to increase customer satisfaction at the OE services.

*Source: Frost & Sullivan Analysis*

# REGULATORY INFLUENCES

# AUTOMOTIVE AFTERMARKET—KEY REGULATIONS, 2023 (1/2)

WINTER TIRE MANDATES, ALONG WITH PERIODIC INSPECTIONS AND VARIOUS REQUIRED EQUIPMENT FOR COMMERCIAL VEHICLES, SIGNIFICANTLY INFLUENCE THE AFTERMARKET INDUSTRY BY DRIVING CONSISTENT DEMAND FOR SEASONAL TIRE CHANGES, MAINTENANCE SERVICES.

| Legislative Topic | Overview |
|---|---|
| **Winter Tire for Commercial Vehicles** | • It is mandatory for vehicles used to transport passengers and goods on intercity highways to use winter tires in the four-month period between December 1 of each year and April 1 of the following year. (Highway Traffic Law 65/A)<br>• Governorships may increase the winter tire application by 1 month before and/or after the period determined by the Ministry. |
| **Periodical Inspection** | • Inspections of trucks and buses are carried out at inspection stations belonging to the Ministry of Transport or at inspection stations belonging to real or legal persons duly authorized by this Ministry. (Highway Traffic Law 68)<br>• Inspections are done once a year. |
| **Motor Vehicle Insurances** | • Mandatory traffic insurance for highway motor vehicles, which is mandatory in accordance with the Highway Traffic Law No. 2918 |
| **Mandatory Equipments** | • **Tachograph:** It is mandatory to have a tachograph determined by the Ministry of Science, Industry and Technology and to keep them in usable condition.<br>• **Seatbelt:** Mandatory for front seats. It should comply with the European Community Directive No. EEC-77/541 or the Economic Commission for Europe regulation No. ECE R 16.<br>• **Spare materials and tools:** Jack, wheel wrench, one spare bulb for exterior light equipment, pliers, screwdriver, portable lamp or flashlight, a pair of skid chains for snowy and icy days, towing rope.<br>• **Signs determining loaded and unloaded weights**: For trucks, There should be a metal plate in the middle of the back cover of the safe, measuring 24x24 cm and showing the loaded and unloaded weights.<br>• **Speed limiting device:** It is mandatory to have and use a speed limiting device in N2 and N3 class trucks and M2 and M3 class buses.<br>• **Rear impact protection frame:** The truck should be equipped with a frame that prevents the vehicle hitting from behind from going under the vehicle in front. Mandatory for N2 and N3 class trucks.<br>• **Rear signboard:** Two signboards specific to trucks complying with the European Economic Commission Regulations ECE R70 should be attached to trucks with a maximum loaded weight exceeding 7.5 tons.<br>• **Fire Extinguisher:** Fire extinguisher requirements for trucks vary based on the size (0-3.5 tonnes, 3.5-7.5 tonnes, over 7.5 tonnes) and type of dangerous goods being transported, while for buses, it's determined by the number of available passenger seats.<br>• **Obstacle sign:** In the event of a malfunction or being left on the highway for a long time, there should be an obstacle sign that can be clearly seen from at least 150 meters under normal weather conditions, has a size of 150x25 cm and complies with the technical conditions in ECE70, one of the European Community Directives and European Economic Commission Regulations. |

*Source: Frost & Sullivan Analysis*

# AUTOMOTIVE AFTERMARKET—KEY REGULATIONS, 2023 (2/2)

COMPLIANCE WITH EU REGULATIONS FOR EMISSIONS IS IMPACTING THE INSPECTION AND MAINTENANCE OF VEHICLES TO BE MORE STRICT IN TURKEY.

| Legislative Topic | Overview |
|---|---|
| **Exhaust Inspection** | • Trucks and buses are subjected to periodic exhaust gas emission measurement at the end of their first year and annually thereafter. |
| **Updated EU Targets** | • The new rules maintain the existing 2025 target currently set at a 15% emissions reduction for heavy lorries weighing over 16t. In line with the EU's climate objectives for 2030 and beyond, the regulation further establishes the following new targets:<br>○ a 45% emissions reduction from 2030 (increased from 30%)<br>○ a 65% emissions reduction from 2035<br>○ a 90% emissions reduction from 2040<br>○ These targets will apply to medium lorries, heavy trucks weighing over 7.5t and coaches, as well as to corresponding vocational vehicles from 2035 onwards. |

*Source: Frost & Sullivan Analysis*

# CONCLUSIONS

# KEY CONCLUSIONS

| | KEY CONCLUSIONS |
|---|---|
| AGING VEHICLE FLEET | • The average age of trucks is nearly 18 years, and for buses, it is 16 years. This suggests that the majority of the fleet is older, leading to increased maintenance needs with only 16% of the vehicle parc is comprised of vehicles up to 5 years old. This small proportion of newer vehicles highlights a market where older vehicles dominate.<br>• The aging vehicle fleet necessitates a substantial demand for independent aftermarket services and parts inventory, particularly for vehicles over 10 years old. This creates opportunities for businesses specializing in these areas. |
| EXPANDING SERVICE INTERVALS | • There is a noticeable shift towards longer maintenance intervals, driven by advancements in vehicle technology and the improved quality of parts and lubricants. This trend could affect the frequency of service visits and demand for certain aftermarket services.<br>• Digital tachographs also impacts the number of trips to be lessened compared to before for logistics vehicles, lowering the need and frequency of maintenance. |
| ROLE OF LOGISTICS AND E-COMMERCE | • International road logistics companies and the growing e-commerce sector are significant contributors to the market. These sectors ensure regular maintenance and inspections, but vehicles tend to be sold to the local market after around 10 years of service. In the local market, replacement and maintenance activities are often delayed, increasing the demand for aftermarket services. In year 2021, the medium truck sales doubled showing a significant demand for local delivery needs.<br>• New business models serving more to medium vehicle fleets such as mobile servicing at the spot are expected to evolve further. |
| SUSTAINABILITY & TECHNOLOGY | • Stricter regulations, including the application of Euro VI standards by 2027 and mandatory carbon emissions reporting for logistics clients, are driving the evolution of innovative parts and servicing. Additionally, the increased use of technology for remote monitoring in trucks and buses necessitates more software-centric capabilities. These changes pose a challenge to the independent aftermarket in terms of required skills and competitive pricing. |

*Source: Frost & Sullivan Analysis*

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TURKISH AUTOMOTIVE AFTERMARKET ASSOCIATION

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