FROST & SULLIVAN

Strategic Analysis of the Turkish Automotive Aftermarket

To evaluate the market potential of Turkish Automotive Aftermarket

PASSENGER VEHICLES & LIGHT COMMERCIAL VEHICLES

FINAL REPORT

Frost & Sullivan
May 10th, 2024

THİS SECTORAL RESEARCH
COMMISSIONED BY THE OSS ASSOCIATION.

TURKISH AUTOMOTIVE AFTERMARKET ASSOCIATION
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RESEARCH OBJECTIVES, SCOPE, AND OVERALL PROJECT STATUS

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, analyse, 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, etc)

SCOPE

Region: Only Turkey

Vehicle Scope: Light vehicles: Passenger cars (PC) and Light Commercial Vehicle (LCV) (up to 3.5 tones in GVW)

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)
Engine
Transmission
Steering and Suspension

Case Studies
Rubber and metal parts
Engine Mount
Transmission mount
Crank shaft pulleys

METHODOLOGY

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

BASE FIGURES	REPLACEMENT FACTORS CONSIDERED				MARKET SIZE
Key Figures Considered	WEAR & TEAR	ACCIDENT	REGULAR MAINTENANCE or INSPECTION	ACCESSORIES / CONSUMER DRIVEN	**A*B*C**
Vehicle Parc; PC and LCV Breakdown; Age Breakdown; Type of Transmission	Based on the part either overall vehicle parc or breakdown of the parc is considered *e.g. clutch sets that are related with manual transmission*	For parts replaced due to accident are calculated based on number of accidents	PC and LCV breakdown and Vehicle age breakdown is utilized	All parc is considered	**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	**B = Replacement Rate = Average KMs Driven/ KM of Replacement**
	PC vs LCV average KM in a year is applied separately				
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 OVERVIEW

TURKISH AFTERMARKET ROADMAP

AFTERMARKET SOLUTIONS HAVE BEEN ON DEMAND IN POST-COVID ERA DUE TO LOCKDOWNS, SUPPLY CHAIN ISSUES DUE TO TENDENCY TO KEEP VEHICLES LONGER.

Automotive Aftermarket: Aftermarket Roadmap, Turkey, 2006–2026

The Economy
- Stable
- Sudden crash - high levels of unemployment, reduced disposable income
- Decrease in export to Europe
- Road to recovery of export to Asian and African countries
- Threat of weakened Turkish lira and inflation could drive prices higher and lead to volatile business conditions and unpredictability in expenses.

Fuel Prices
- Stable increase
- High peak
- Ever increasing prices 2014 (4.14 TRY) ; 2024 (43.93 TRY) per litre impacts the car ownership and maintenance cycles due to tendency toward saving from vehicle expenses.

Vehicle Sales
- Steady vehicles sales
- Impact of economic crises, New PC and LCV sales drop (3.37%) YoY in 2009
- Sales dropped at a rate of -3.6% between 2016-2021 period.
- Record sales in 2023 to 1.2 million units, expected to decrease by 2025

Vehicle Use
- VIO increase with average 6% increase each year
- Increasing miles travelled
- Increase in Fuel prices and slowing economy begin to drive vehicle usage downward.
- VIO grew at a CAGR of 3.8% between 2016–2021 for light vehicles.
- VIO is expected to grow at a rate of 3.0% in the next 5 years.

The Aftermarket
- Revenues in minor maintenance; accessories restored to 2007 levels.
- Supply chain crisis leads to parts shortage
- EV related aftermarket solutions.
- Revenue rate increase slowing
- Accelerating growth annually
- Skilled technician shortage

2006 | 2009 | 2015 | 2021 | 2026

Source: Frost & Sullivan Analysis

MAJOR TRENDS IMPACTING TURKISH AFTERMARKET (1/3)

AROUND HALF OF THE VEHICLE PARC IS ABOVE 10 YEARS OLD, CONTINUE SHOWING A DEMAND FOR AFTERMARKET SOLUTIONS IN THE INDEPENDENT SERVICES.

Tendency to Keep Vehicles Longer & Increasing LV Parc

- **FY2023 was a record year for light vehicle sales, with 1.2 million units sold, a 57% increase compared to 2022**.
- In **2023, used car sales also increased by 8.4%,** with the revival of new vehicles where consumers traded their used cars to the second-hand car market.
  - **51% of the used cars sold were older than ten years**, driving demand for automotive aftermarket solutions.
  - In **2024, used car sales are expected to increase** as more new cars enter the market, while new car sales are expected to drop after reaching an all-time peak of 1.2 million.
- **VIO (parc) has been growing at a constant rate of about 4.0% for light vehicles between 2022 and 2023**.
  - As of 2023, the number of VIO accounted for **19,034,157 light vehicles**.
  - The latest **scrappage scheme introduced in 2019 resulted in 318,270 vehicles being withdrawn from the parc**, impacting the vehicles in operation to increase only by 0.9% that year.
  - The **vehicles over five years old account for 78.5% of the total light vehicle parc, indicating a significant potential for cars needing repair and maintenance from Independent Aftermarket service providers.**
- The **damages from traffic accidents increased by 3.7% in 2022 compared to 2021**.
  - The total number of accidents with material damage reached 1 million in 2022.

Financial Volatility and Price Inflation

- The reasons for this decrease stem from **financial volatility**:
  - The **depreciation of the Turkish Lira,**
  - High **inflation rates,**
  - Uncertainty due to **Covid-19** and Global supply chain crisis.
- This has **increased the operation cost**, especially with **Utility costs & rents rising by at least 4 times** during the last 2 years.
  - The **fleet service contracts** have **changed from fixed monthly fees to flexible contracts, with the possibility of reflecting price increases in at least six** months.

Source: Frost & Sullivan Analysis

MAJOR TRENDS IMPACTING TURKISH AFTERMARKET (2/3)

AS THE CHALLENGE OF RETAINING SKILLED WORKERS PERSISTS IN THE MARKET, THERE IS A GROWING IMPERATIVE FOR DIVERSIFICATION TOWARD EV (ELECTRIC VEHICLE) SERVICE AND MAINTENANCE TO ADAPT AND EVOLVE.

Low Retention Rate in the Special Skilled Workforce

- There is a **challenge in finding a skilled workforce**, especially with good technical skills
  - There has been a job switch, with a skilled workforce taking jobs in last-mile delivery services as they offer higher compensation.
- The **migration of 3.6 million Syrian refugees to Turkey helped fill the workforce gap** within the industry while **retention rates continue to be low.**

Vehicle Migration from Urban to Rural

- Vehicles in **use in urban locations are sold as used vehicles in the rural areas** of Turkey.
  - This drives the **need for a well-spread service network and parts supply** across the country.
- There are approximately **50 different brands in Turkish car parc** pushing aftermarket players to respond with a **large inventory of parts** across the country

Business Diversification
(E-commerce, Electrification and Regular Maintenance)

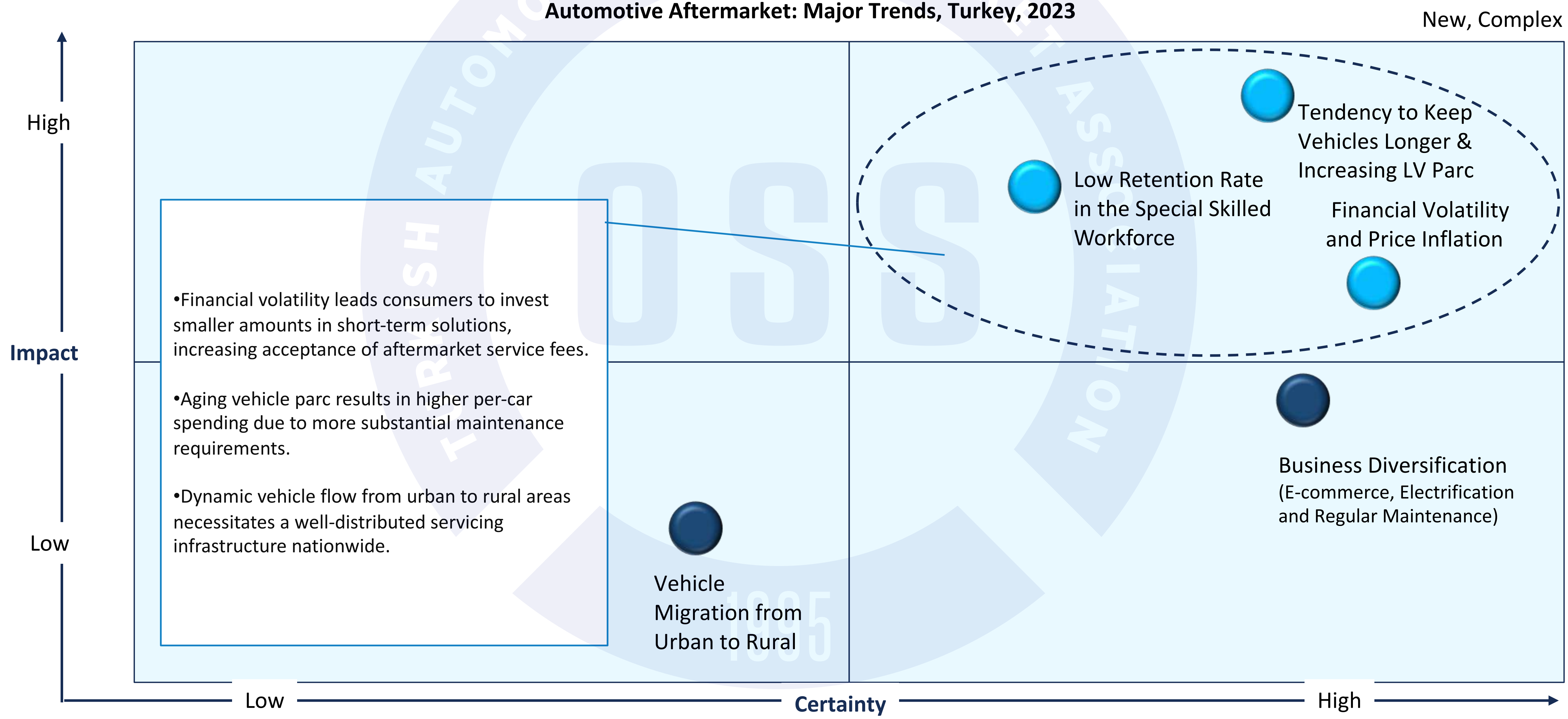
- Most service chains have diversified their business in the last two years, such as from only selling specific parts (e.g., tires) to providing regular maintenance services, used car evaluation services, or partnering with e-commerce platforms.
- **The share of vehicles sold through online sales of light vehicles was 9.5% in 2023 and reached 1.8 million. Online sales of automotive parts and accessories were 2.5% in 2021** and are expected to increase significantly.
  - Auto accessories, car audio and video systems (navigation, in-car camera, tape recorder, speakers, amplifier, MP3 and CD player, etc.), phone and tablet holders, auto spare parts, tire and rim, and car care products are the main parts sold online.
- Sales of **electric vehicles** reached **5.4% with 66 thousand vehicles** with the launch of Turkish EV from TOGG and entry of new Asian brands BYD and Skywell along with the entrance of Tesla, which will drive the service portfolio transitions in workshops to provide newer services.
  - Advanced vehicle technologies such as BEV and ADAS features in new vehicles drive workshops to upskill constantly.

Source: Frost & Sullivan Analysis

MAJOR TRENDS IMPACTING TURKISH AFTERMARKET (3/3)

AS CONSUMERS STRIVE TO ADAPT TO ESCALATING PRICES, THE TREND OF DELAYING VEHICLE MAINTENANCE WORK IS RISING.

Automotive Aftermarket: Major Trends, Turkey, 2023



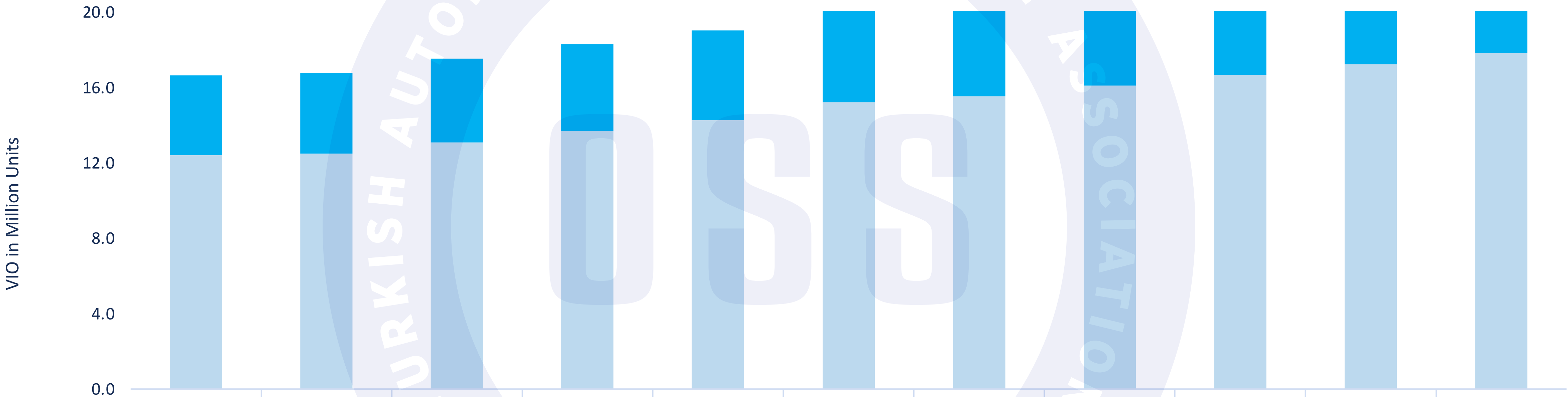
Source: Frost & Sullivan Analysis

VEHICLES IN OPERATION (PARC) ANALYSIS

TOTAL VEHICLES IN OPERATION (PARC) BY MODEL YEAR

6.9 MILLION LIGHT VEHICLES HAVE BEEN ADDED TO THE VEHICLE PARC SINCE 2014, SHOWING SIGNIFICANT POTENTIAL FOR AFTERMARKET SERVICES.

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



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
LCV (Pickup/Van)	4.24	4.29	4.43	4.60	4.76	4.99	5.13	5.30	5.41	5.52	5.65
PC	12.40	12.50	13.10	13.71	14.27	15.22	15.53	16.11	16.68	17.25	17.82

- By the end of 2023, about 28,740,492 vehicles were recorded to be in operation with the below breakdown;
  - 53.0% passenger cars; 15.6% pick-up/van; 17.7% motorcycle; 7.6% tractor; 3.3% trucks; 1.7% minibuses; 0.7% buses, and 0.3% special purpose vehicles. Motorcycles share within the parc has grown compared to 2014.

VIO figures are sourced from TUIK number of vehicles registered each year, including 20+ year old vehicles.

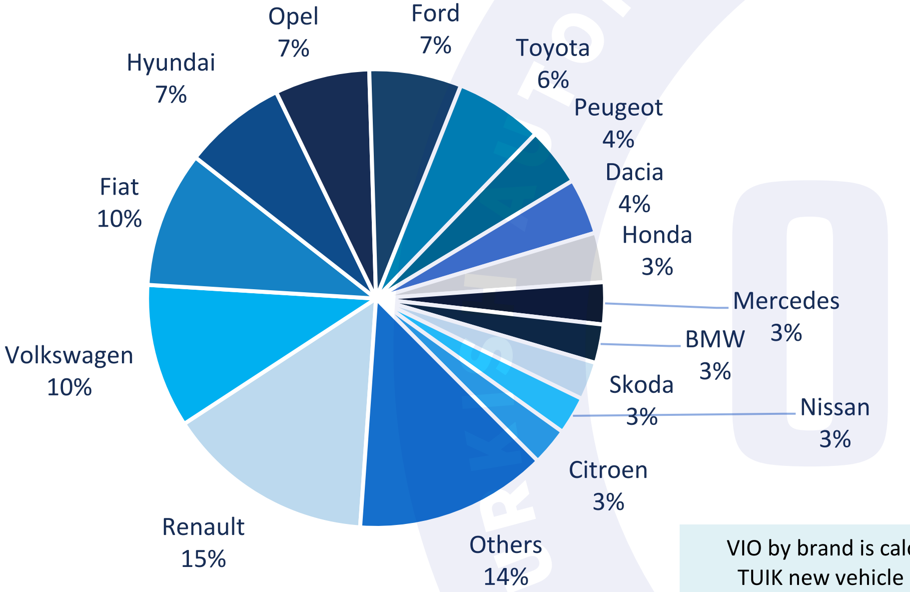
Note: The report includes the VIO of passenger cars (PC) and LCV/ pickups/vans (shown in the chart).

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

TOTAL VEHICLES IN OPERATION (PARC) BY BRAND

THE TOP OEMS IN THE PARC ARE MAINLY RENAULT, VW, AND FIAT FOR CARS; WHILE FIAT, RENAULT, AND FORD ARE THE TOP BRANDS FOR NEW VEHICLE SALES.

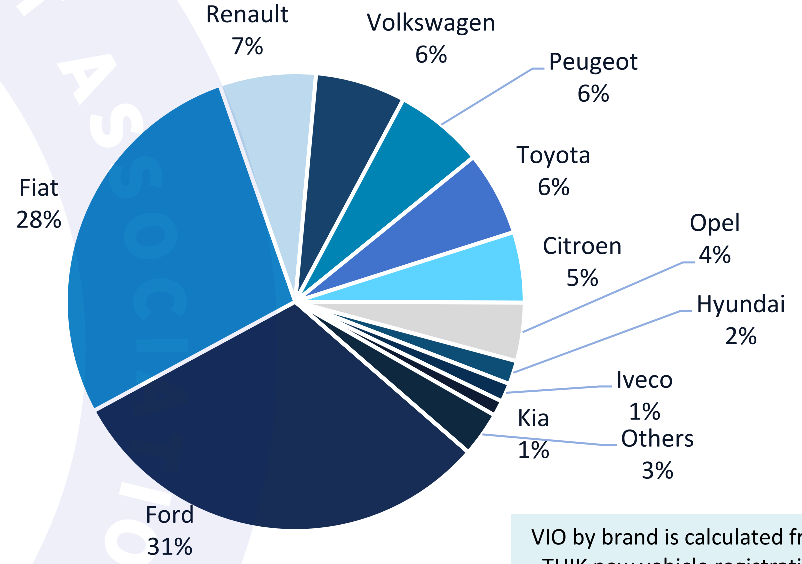
Automotive Aftermarket: Number of Passenger Cars in VIO (Parc) by Brand, 2004 – 2023



**Others include Audi, Kia, Seat, Chevrolet, Volvo, Suzuki, Land Rover, Jeep, Mitsubishi, Mazda, Mini, Porsche, Alfa Romeo, Daihatsu, Lada, Geely, Subaru, Chery, Jaguar, Chrysler, Lancia, DS, Dodge, Smart, Ikco, Saab, Infiniti, MG, Bentley, Cupra, Rover, Isuzu, Lamborghini.*

VIO by brand is calculated from TUIK new vehicle registrations minus vehicles withdrawn from the parc each year starting from year 2004.

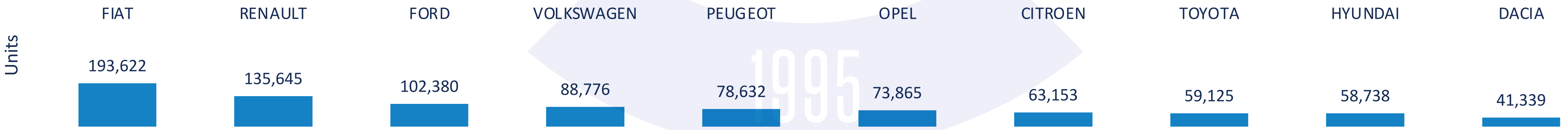
Automotive Aftermarket: Number of LCV in VIO (Parc) by Brand, 2004 - 2023



***Others include Dacia, Isuzu, Opel, Toyota, Kia, Nissan, Iveco, Mercedes Benz, BMC, Mazda, Desoto, Kanuni, Chrysler, Daihatsu, Gaz, Skoda, Chery, Fargo, Piaggio, Dodge, Land Rover, Man, Fuso, Chevrolet, Suzuki, Hino, Hiscar, Leyland, Otokar, Seat, Mini, Inter, Jeep, Austin, Lada*

VIO by brand is calculated from TUIK new vehicle registrations minus vehicles withdrawn from the parc each year starting from year 2004.

Automotive Aftermarket: New Registration of Automobiles by Brand, 2023

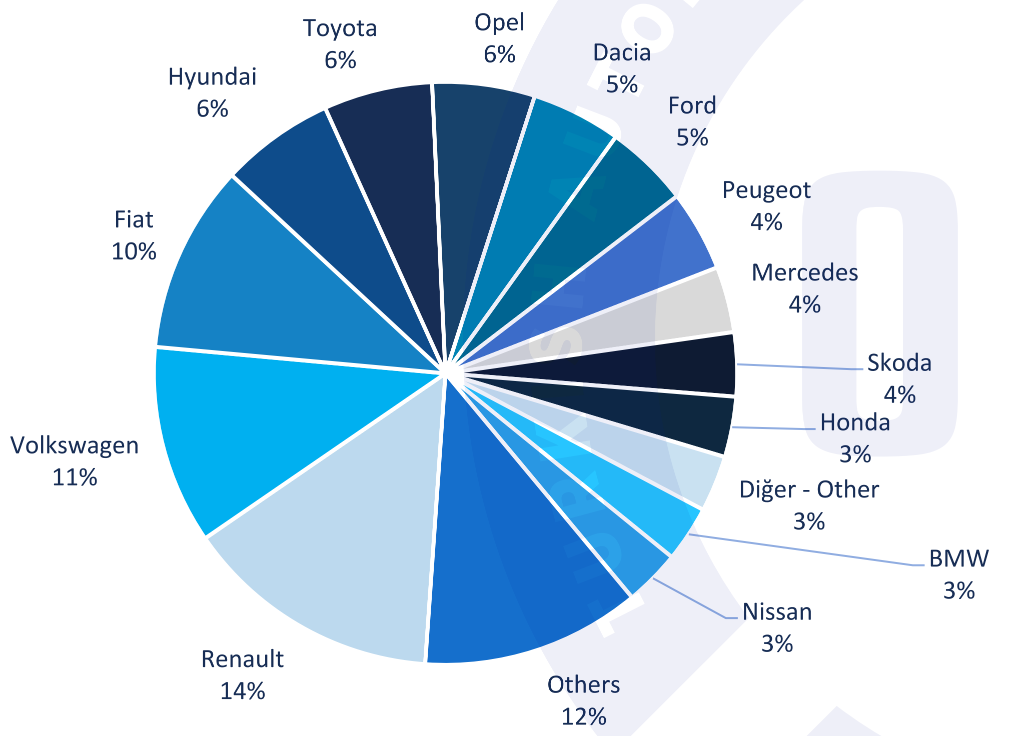


Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis

TOTAL VEHICLES IN OPERATION (PARC) BY BRAND IN THE LAST 10 YEARS

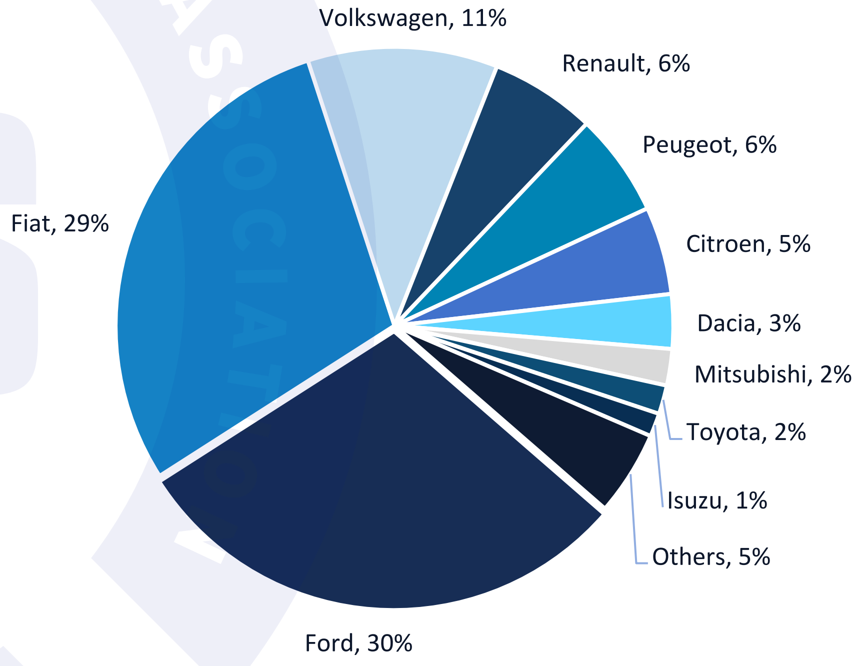
LCV PARTS AND ACCESSORIES PARTS FOR FORD, FIAT, AND VOLKSWAGEN CONTINUE TO BE THE MOST DEMANDED BRANDS IN THE MARKET FOR VEHICLES UP TO 10 YEARS OLD.

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



VIO by brand is calculated from TUIK new vehicle registrations minus vehicles withdrawn from the parc each year starting from year 2011.

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



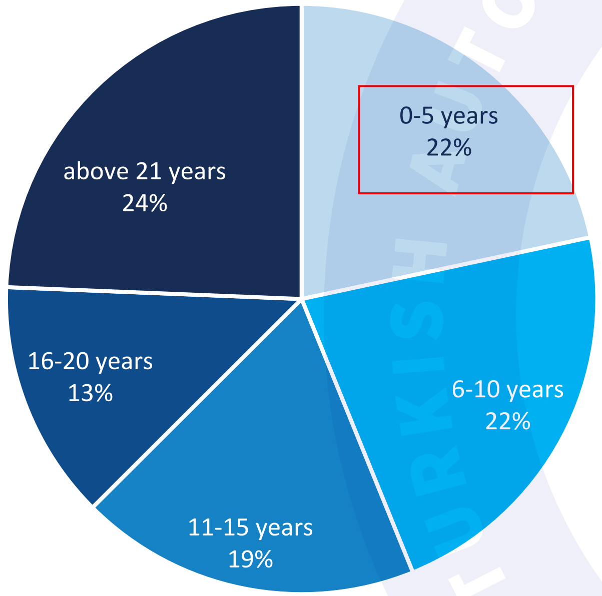
VIO by brand is calculated from TUIK new vehicle registrations minus vehicles withdrawn from the parc each year starting from year 2011.

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

TOTAL VEHICLES IN OPERATION (PARC) BY AGE 2023

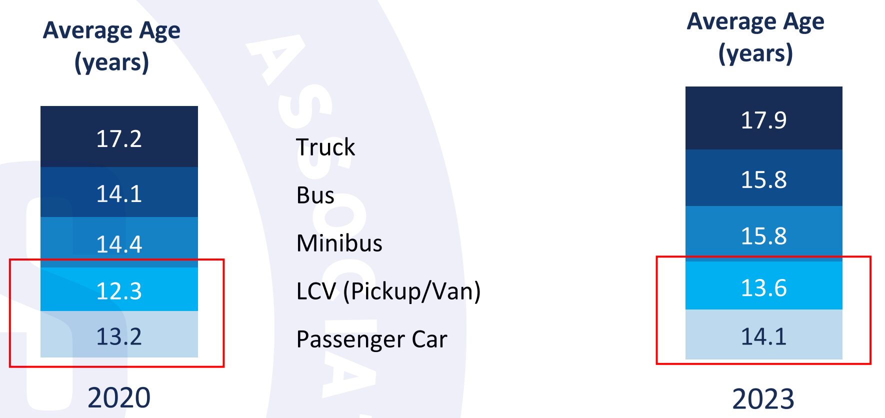
78% OF THE PARC COMPRISES VEHICLES THAT ARE 5 YEARS AND OLDER. WITH LIGHT VEHICLES AVERAGING 14.0 YEARS, THERE IS A GROWING DEMAND FOR THE AVAILABILITY OF OLDER VEHICLE PARTS IN THE MARKET.

Automotive Aftermarket: Total VIO Percent Share by Age PC & LCV, Turkey, 2023



Note: In this chart, only passenger cars and pickup/vans are included.

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



The average vehicle age is 13.0 for passenger cars and LCV (pickup/vans).

The average vehicle age is 14.0 for passenger cars and LCV (pickup/vans).

Note: Special purpose vehicles and tractors are excluded from the chart.

- The vehicle parc is getting older in Turkey and reached 14.0 years on average in 2023.
- Historically, In Turkey, the scrap age scheme* has been applied for the years 2003–2004, 2010–2011, 2013, 2017-2018 and 2019.
- In the 2019 scrap age scheme impacted, the number of vehicles withdrawn increased at a rate of 73.4% compared to 2018; however, new vehicle sales still exceeded the number of vehicles withdrawn.

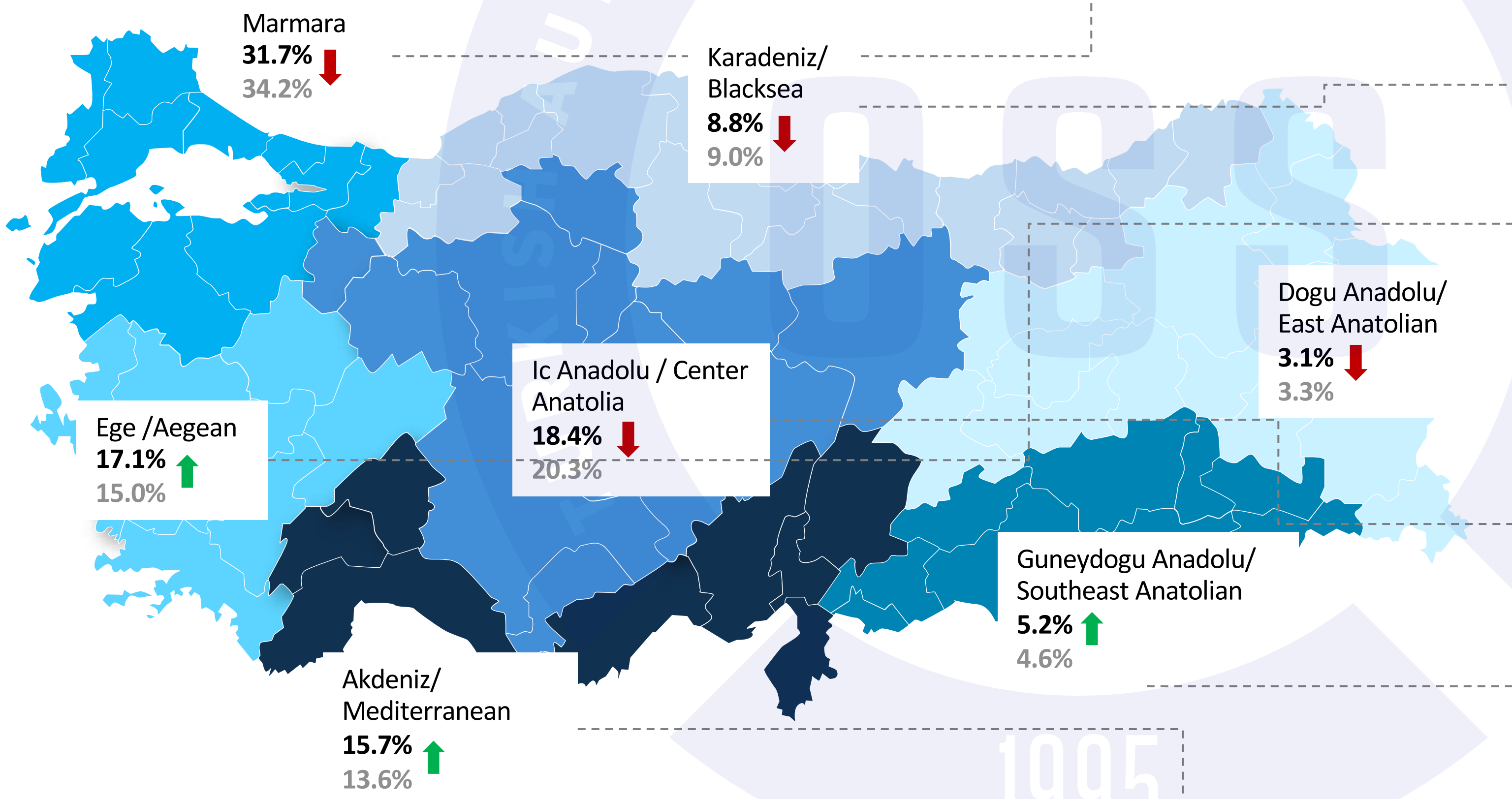
*Note: *Scrap age scheme is the encouragement of Turkish citizens to purchase a new car or van and scrap an old one.*

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

VIO BY REGION

AEGEAN, MEDITERRANEAN AND SOUTHEAST ANATOLIAN REGIONS INCREASED THEIR SHARE OF VEHICLES COMPARED TO 2014.

Automotive Aftermarket: VIO by Region, Turkey, 2023



1	Marmara **9 114 996**
5	Blacksea **2 525 614**
3	Aegean **4 919 785**
7	East Anatolian **884 211**
2	Center Anatolia **5 277 498**
6	Southeast Anatolian **1 506 386**
4	Mediterranean **4 512 002**
	Total: 28 740 492

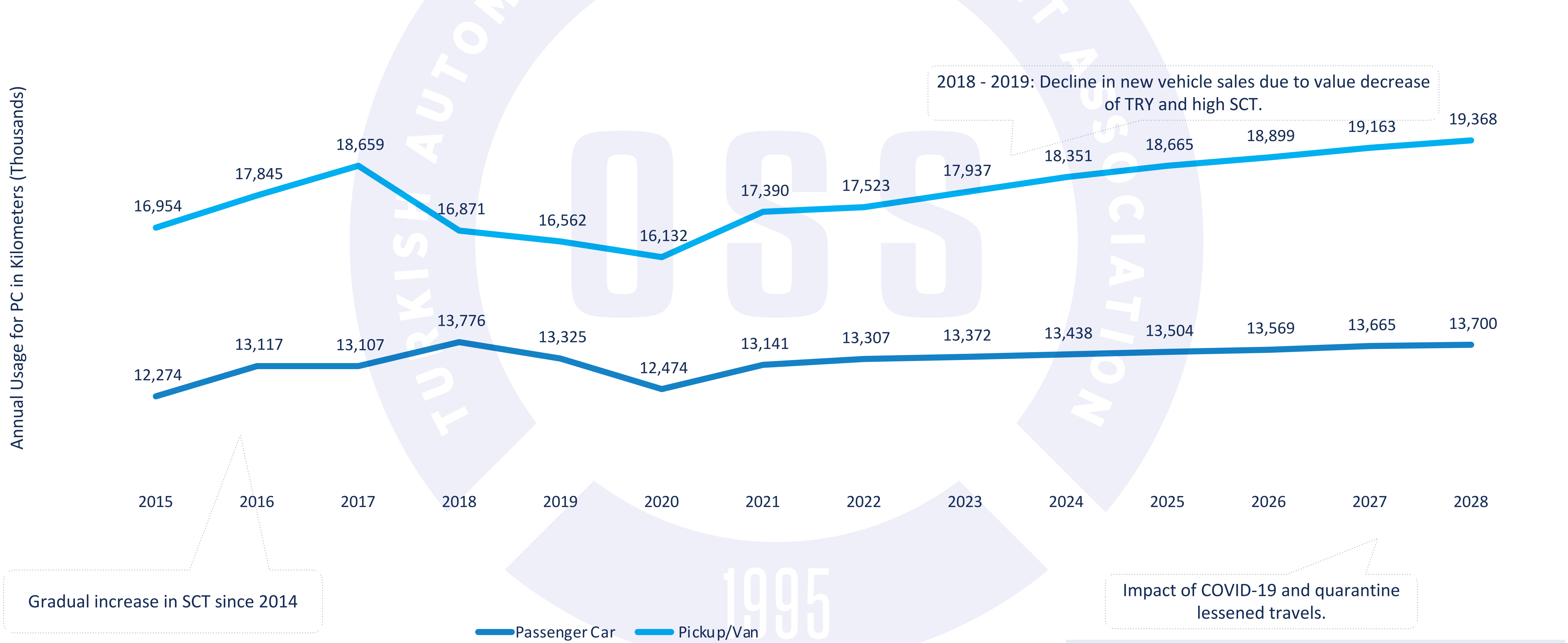
X%: 2023
X%: 2014

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

AVERAGE KILOMETER DRIVEN

AVERAGE KILOMETERS ARE SLOWLY RISING POST-COVID DUE TO HYBRID WORKING, WHILE WEEKEND TRIPS ON LONGER ROUTES INCREASE, FACILITATED BY RECENT MAJOR ROAD PROJECTS LINKING URBAN AND VACATION SPOTS.

Automotive Aftermarket: Average Annual Vehicle Use Per Vehicle, Turkey, 2015–2028



Both (b2c) and fleet (b2b) customer segment are included in average km travelled.

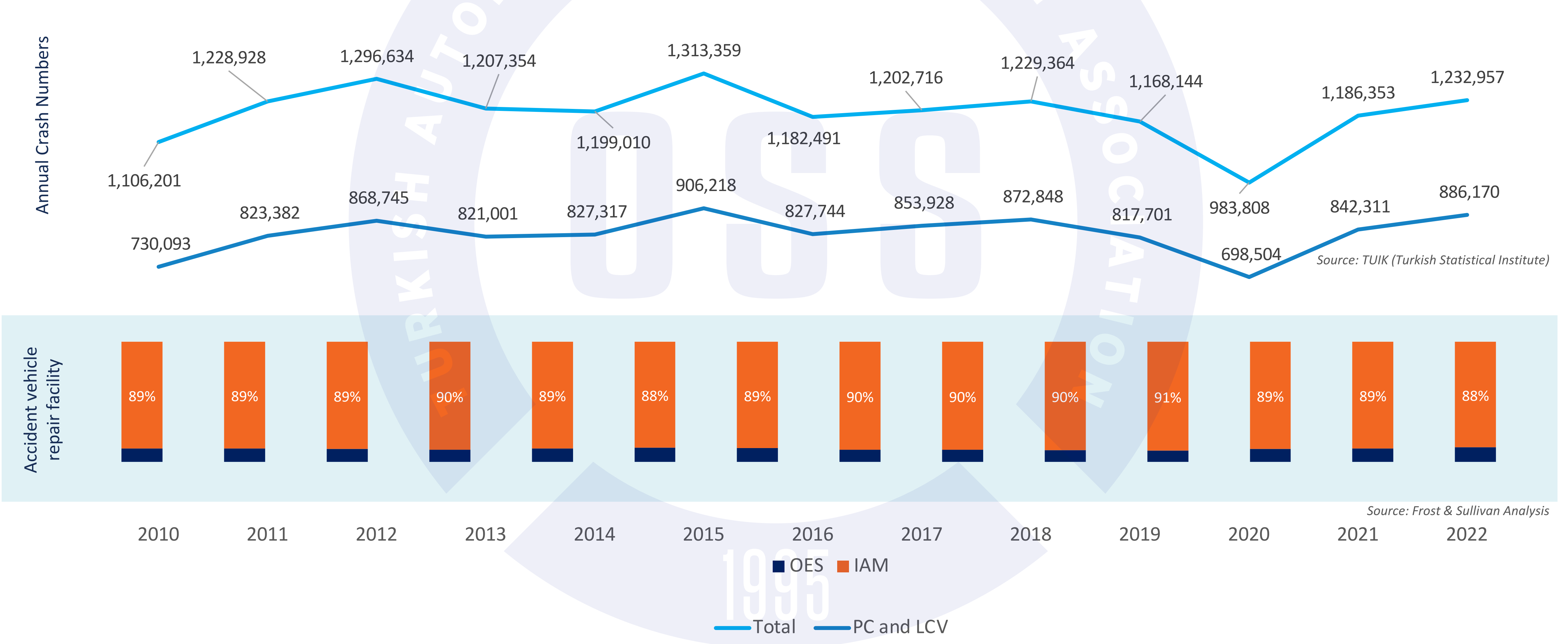
Key: Special Consumption Tax (SCT)

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

ANNUAL CRASH NUMBERS & REPAIR LOCATION

THE NUMBER OF CRASHES IS STEADILY INCREASING, APPROACHING LEVELS WITNESSED IN 2018 . THIS RAISES CONCERNS ABOUT ROAD SAFETY AND HIGHLIGHTS THE NEED FOR GROWTH IN COLLISION-RELATED AFTERMARKET SOLUTIONS.

Automotive Aftermarket: Annual Crash Numbers vs. Repair facility, Turkey, 2010–2023

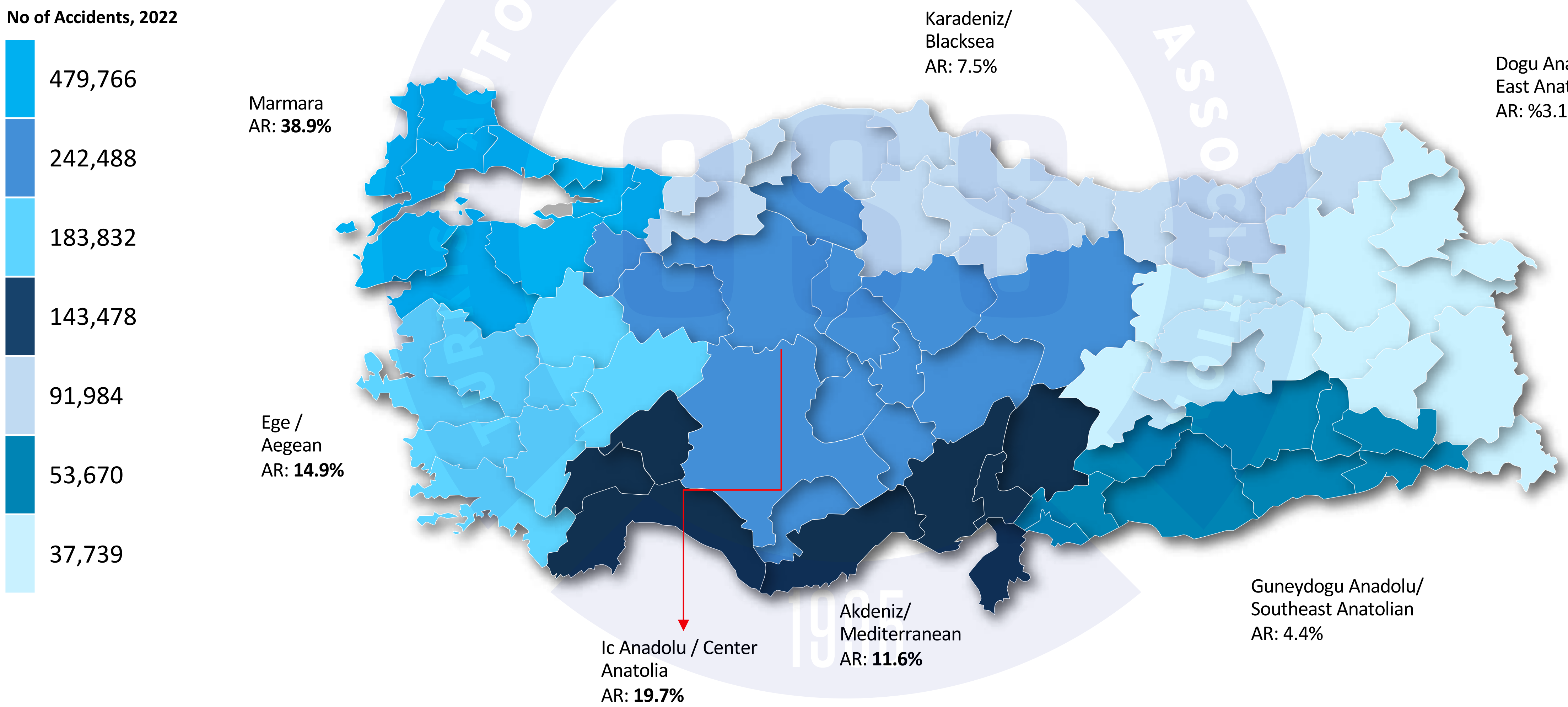


Source: TUIK (Turkish Statistical Institute), Frost & Sullivan Analysis

ANNUAL CRASH NUMBERS BY REGION

MARMARA REGION ALONG WITH CENTRAL ANATOLIA HAVE THE HIGHEST NUMBER OF ACCIDENTS EQUATES TO HIGH NUMBER OF COLLISION BODY SHOPS.

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— REVENUE

THE TURKISH AUTOMOTIVE AFTERMARKET FOR LIGHT VEHICLES IS EXPERIENCING GROWTH, DRIVEN BY THE INCREASING NEED FOR USED VEHICLE MAINTENANCE AND SERVICES, PARTICULARLY IN AREAS SUCH AS TIRES, OIL, COLLISION BODY, AND BRAKE PARTS.

Automotive Aftermarket: Revenue by Category, Turkey, 2023–2028

	2023 Revenue ($ Million)	2028 Revenue ($ Million)	CAGR (2023–2028)
Tires	1,594.1	2,036.5	5.0%
Batteries	373.4	465.3	4.5%
Oil	601.9	746.4	4.4%
Brake Parts	534.5	659.7	4.3%
Filters	261.3	317.9	4.0%
Collision Body	555.8	619.7	2.2%
Starters and Alternators	126.5	140.4	2.1%
Lighting	177.8	206.7	3.1%
Engine Components	183.0	204.5	2.2%
Transmission Components	255.1	286.3	2.3%
Cooling system	120.0	135.7	2.5%
Wheel Bearing	75.1	88.4	3.3%
Steering and Suspension	146.2	174.5	3.6%
Others	1,461.3	1,795.1	4.2%
Total	**6,466.0**	**7,877.1**	**4.0%**

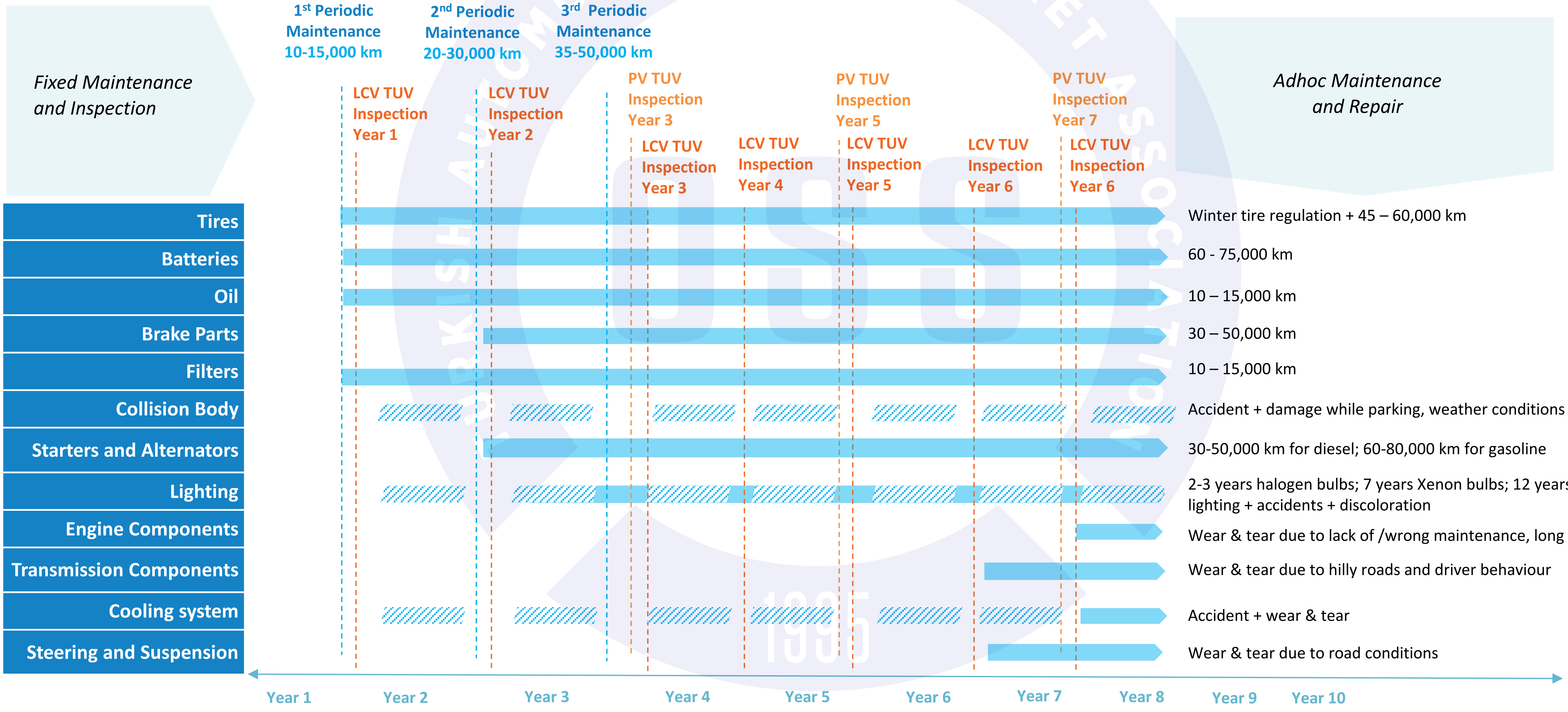
- The Turkish automotive aftermarket for light vehicles reached $6.5 billion USD in 2023 and is projected to achieve a 4% compound annual growth rate (CAGR) by 2028.
- Declining sales in pre-Covid years resulted in increasing need for used vehicle maintenance and services coupled with increasing average age beyond 14 years.
- Tires, oil, collision body and brake parts are the top revenue streams by revenue due to their frequent replacementt rate due to wear & tear, dent and scratches in highly populated areas and road & traffic conditions.
- While transmission and engine components will be impacted by increase in electric vehicles in parc, tires, suspension and even low voltage batteries will be impacted positively by heavier high voltage batteries Changning the physics of the vehicles. Lighting will also be impacted by EVs as nearly all EVs will be equipped with LED versions which last longer with higher price points.
- Wheel bearing local manufacturers are being protected through higher import taxes.

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

Source: Frost & Sullivan Analysis

REPLACEMENT RATE OF PARTS IN TURKISH AFTERMARKET

REPLACEMENT RATES OF SYSTEMS AND PARTS ARE DEPENDENT ON VARIOUS FACTORS WITH VEHICLES BETWEEN AGE 6 TO 20 ARE THE MAIN MARKET FOR AUTOMOTIVE AFTERMARKET SUPPLIERS IN TURKEY.



Source: Frost & Sullivan Analysis

KEY INSIGHTS ON LIGHTING AFTERMARKET

THE INCREASING COMPLEXITY OF LIGHTING PARTS, NOW SOLD AS INTEGRATED SYSTEMS RATHER THAN INDIVIDUAL COMPONENTS, IS RESHAPING SALES STRATEGIES IN THE AUTOMOTIVE AFTERMARKET.

LIGHTING

REPLACEMENT FACTORS

WEAR & TEAR | ACCIDENTS | INSPECTION | ACCESSORIES

Coverage	Front headlights, front signal lamps, fog lamps, rear lights, traffic warning lights including LED, halogen, Xenon lamps
Replacement Factors	• Headlight generally includes signal lamps and their change is heavily dependent on wear & tear: discoloration where consumers tend to extend its replacement frequency and kilometres travelled, driver qualification, quality of roads are impacting the wear and tear where Central Anatolia regions these factors the need to change lighting is high. • Accidents are also a significant driver for lighting. Most of the headlight change is right side due to driver reaction to protect left side in case of an accident. • Inspection every year for LCV's and every two years for pc's are driving mainly the quality and replacement of lamps. Broken lighting products do not pass inspection and need to meet optical tests to some extent. • As an accessory lamps are also being changed for better aesthetic especially for fog lamps. • While halogen lamps can be changed as singles, the xenon lamps are generally changed in pairs.
Supply	Lighting has a local production capability in Turkey especially for rear lamps
Electrification	EV models are generally produced with LED where the replacement rates will be dropped in the aftermarket but the unit price will increase significantly.
E-commerce	While there is still time for e-commerce for lighting to grow, mechanics are utilizing the online purchases and imported economy lighting brands are increasing their online sales.
Regulations	For LED lighting there is no TSE standard requiring similar homologation standards to other lighting may cause issues in the market. And also even though it is prohibited, non-homologated lighting is there in the market.

Source: Frost & Sullivan Analysis

KEY INSIGHTS ON TIRES, BRAKE PARTS AND SUSPENSION AFTERMARKET

PARTS ARE DIVERSIFYING TO MEET SPECIFIC NEEDS SUCH AS HIGH MILEAGE, FUEL EFFICIENCY, AND WINTER DRIVING WHILE RESHAPING PRICING STRATEGIES AS THE MARGINS ARE UNDER PRESSURE.

TIRES

- The market is characterized by specific tire types for various uses such as high mileage, fuel efficiency, and winter driving. This diversity reflects the evolving needs of drivers.
- Since the mandate for winter tires for commercial vehicles in 2012, the use of winter tires has increased notably, impacting market dynamics and consumer behavior
- Retail sales dominate the market, with online channels showing a growing presence. On-site services are becoming more prevalent, particularly offered by online players and large retailers and increasing demand for onsite service for rental companies and fleet companies around Istanbul.
- The rise in EVs is influencing tire consumption patterns, with a demand for more durable and efficient tires.

BRAKE PARTS

- After the initial warranty period, there's a significant shift towards the aftermarket for brake parts, with an expected 75% transition in the next 3-4 years, driven partly by financial considerations and changing consumer preferences.
- The ratio of pad to disc varies but is generally rated at a 2 to 1 ratio in Turkey. The market also includes drums and shoes, which are more prevalent in older vehicles and light commercial vehicles.
- The e-commerce segment is growing, but challenges remain due to concerns about counterfeit products. Reliable platforms and measures to combat counterfeiting are seen as crucial for further e-commerce development.

SUSPENSION

- Vehicles have evolved from simpler suspension systems with 4 parts in older models (1980s-1990s) to more complex systems with nearly 20 parts in newer vehicles, providing better comfort and balance.
- Post-2020, there's a trend where newer vehicles primarily use Original Equipment (OE) parts, while older vehicles lean towards aftermarket parts

Common Considerations from Aftermarket Suppliers

Financial Considerations: Margins are under pressure due to factors like credit card commissions, increased oil prices, and rising logistics costs due to raw material costs, transportation expenses, and regulatory changes. Imports are affected by factors like exchange rates and freight costs. These increases are reflected in the market's pricing strategies.

Source: Frost & Sullivan Analysis

CASE STUDY: ENGINE & TRANSMISSION MOUNT

ENGINE AND TRANSMISSION MOUNTS ARE FAVORABLE AS AN IMPORT PART ESPECIALLY IF HYDRAULIC OR ELECTRONIC AS THERE ARE LOCAL MANUFACTURERS FOR RUBBER CAPABILITIES.

Technology Evolvement Through-out the Years

- **Rubber & metal**
- **Hydraulic mounts**
- **Electronic (active) mounts**

Rubber and metal type still covers large portion of the Turkish aftermarket.

The need for engine mount will continue for EVs with a different version, as the need for high torque will become even more significant

Supply Chain

Strong local production for mounts in Bursa

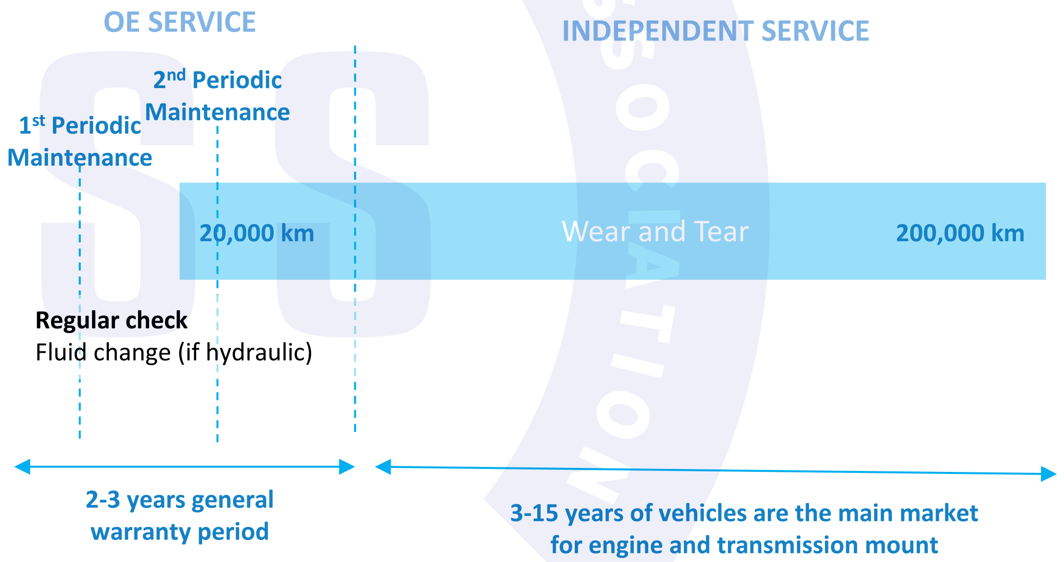
Key global players for import such as Febi Bilstein, Lemforder, Corteco

Import is also comparatively less complex than shock absorbers, or bearing due to no obligation for testing at the customs

A recent % increase in customs tax for non-EU suppliers

Replacement Cycle

Dependent on wear-tear and usage of vehicle, condition of the roads



- Drivers typically don't delay part changes solely due to immediate discomfort, prioritizing safety and vehicle performance.
- Mount changes during servicing are efficiently managed to minimize downtime, ensuring prompt completion of maintenance tasks.

Source: Frost & Sullivan Analysis

CASE STUDY: CRANK SHAFT PULLEYS

DESPITE EVOLVING AUTOMOTIVE TRENDS SUCH AS THE RISE OF BEVS, TURKISH MANUFACTURERS ENJOY A PROTECTED MARKET FOR CRANKSHAFT PULLEYS, ANTICIPATING STABLE GROWTH.

Current Demand and Local Capability

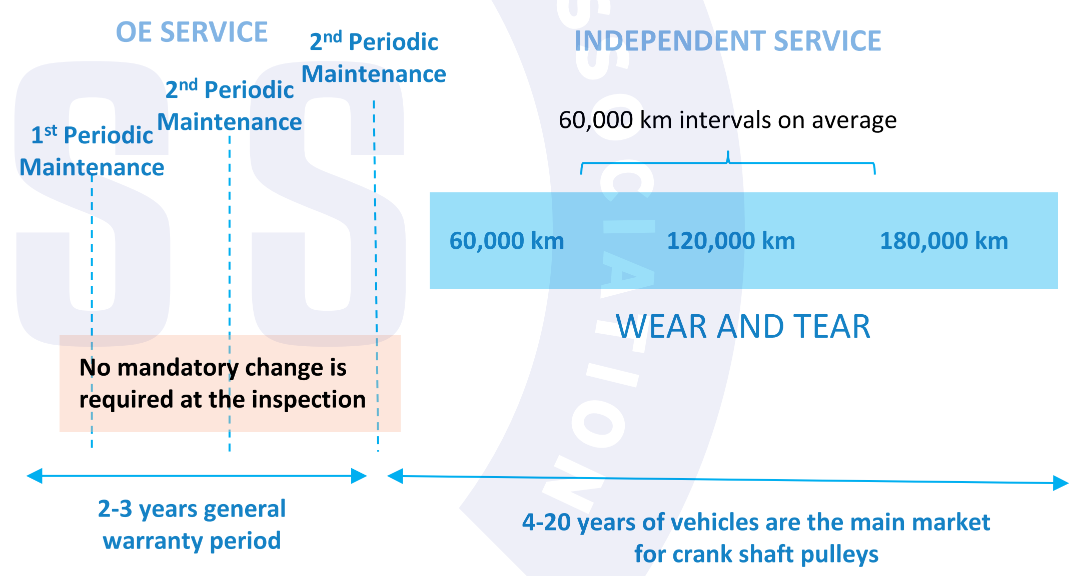
- Local production capability and high Europe export volume.
- The requirement in Europe to replace crankshaft pulleys every 60,000 km is driving sustainable demand for this part in the market.
- There is little competition from Asian brands in the Turkish market, through import tax local producers are protected.

Future Demand

- The need for crank shaft pulleys will decrease as more and more BEVs in the market, manufacturers for this part are planning to diversify their know-how in other rubber and metal parts.
- Hydrogen powered vehicles have more resemblance to ICE, the need for crank shaft pulley will continue to stay.

Replacement Cycle

The replacement of crank shaft pulley is postponed and is not mandatory



- Due to its wear and tear starts after on average of 60,000 km, the replacement period is generally falling under independent service period.
- Product range solely determined by engine type; minimal reliance on vehicle brand/model.
- As post-COVID market is believed to be peaked in 2023; 2024 poised for stability with moderate growth projected through 2028.

Source: Frost & Sullivan Analysis

TOP PARTS/ SYSTEM SUPPLIERS IN TURKEY

LOCAL MANUFACTURERS OF BATTERIES, FILTERS, AND WHEELS ALIGN WITH THE DEGLOBALIZATION TREND IN THE GLOBAL SUPPLY CHAIN, SHOWCASING SIGNIFICANT REGIONAL PRESENCE AND IMPACT.

Tires	Batteries	Oil	Brake Parts	Filters	Collision Body	Starters and Alternators	Spark Plugs	Lighting	Engine Components	Transmission Components	Cooling System	Wheel Bearing	Steering and Suspension
Brisa	Ako	BP Castrol	Beser Balata	Asas	De-Ga	Bosch	Bosch	Ayfar	MAHLE	ZF	Kale	NTN-SNR	AYD
Continental	Esan	Exxon Mobil	Bosch	Bosch	Phira	Delphi	Champion	Depo	BorgWarner	MAPA	Mahle (Behr)	Schaeffler	Delphi
Hankook	Inci	Opet Fuchs	Delphi	Fil Filter	TYG	Denso	Niterra NGK	Hella	Driv (Goetze / Nural)	Schaeffler	Nissens	SKF	Maysan Mando
Michelin	Mutlu	Petrol Ofisi	Ferodo	Hengst		Lucas		Magnetti Marelli	Garrett	Valeo	Valeo		Teknorot
Petlas	Varta	Shell	Kale Balata	Mahle		Valeo		Osram	Rhein metal				ZF / TRW / Sachs
Pirelli	Yigit	Total Elf	Valeo	Mann-Filter/ Filtron		Wai		TYC					
			ZF (TRW)	Sampiyon filtre				Valeo					

Suppliers are listed alphabetically.

Source: Frost & Sullivan Analysis

AFTERMARKET SERVICE ANALYSIS

TURKISH AUTOMOTIVE AFTERMARKET SERVICES INDUSTRY

OTHER THAN THE OEM SERVICE CHANNEL, A STRONG AFTERMARKET INDUSTRY FOR PARTS AND SERVICES IS HANDLED BY CONSOLIDATED AFTERMARKET SERVICE CHAINS/FRANCHISES AND INDEPENDENT GARAGES (SOME UNREGISTERED).

In Turkey, aftermarket service providers primarily fall into two categories:

- Chain/ Franchise service centers: These centers primarily focus on providing regular maintenance services for vehicles between 2 and 10 years old.
- Independent garages: These garages offer a wide range of services, from minor repairs to significant damage repairs, catering mainly to older vehicles.

Chain/Franchise service centers

- Vehicle owners find these centres easy to reach and trust. The infrastructure & setup match up to authorized OEM service standards in terms of tools, training, and equipment.
- They compete with OEM services in providing routine maintenance. Franchise services offer higher discounts for parts than independent garages and from warranty due to quality parts supply.
- Workshops holding TSE 12047 (Service Qualification Certificate) can offer a service covered under the vehicle warranty.
    - There are currently more than 740 shops with TSE 12047 certificates.

Independent garages

- In suburban and rural areas, there are many independent service garages.
- These garages offer a range of services including body repairs, exhaust treatments, battery services, engine repairs, pump and injection services, electrical repairs, auto locksmith services, window repairs, absorber services, tire shops, and auto-climate control services.
- Independent garages play a crucial role in providing sustainable aftersales service potential in these areas.

Source: Frost & Sullivan Analysis

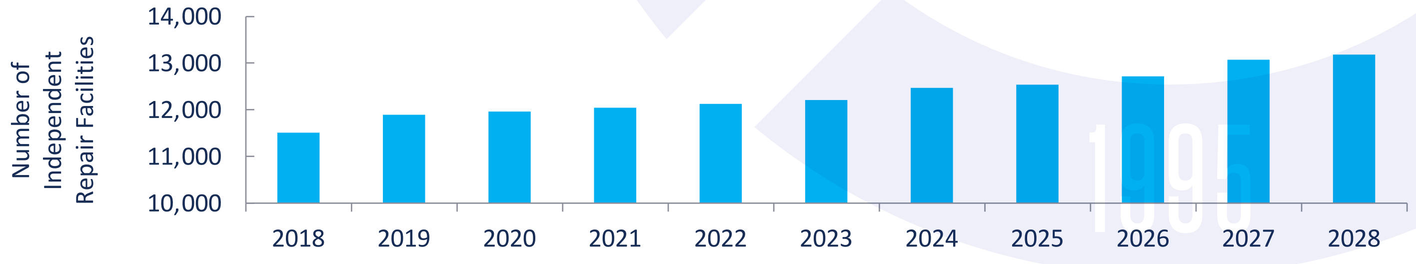
SERVICE CENTERS BY TYPE

TECHNOLOGY EVOLVES AND ELECTRIC VEHICLE BRANDS ENTER THE MARKET, SPECIALIZED INDEPENDENT SERVICE SHOPS ARE GAINING SIGNIFICANCE ALONGSIDE A STABLE VARIETY OF VEHICLES AVAILABLE FOR SALE IN TURKEY.

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

Repair Location	2023 Locations	2028 Locations
Vehicle Dealers	1,510	1,730
Individual Service Centers	Approx. 80,000* ≈25,000 services with >200 m^2 area	Approx. 87,000 ≈27,500 services with >200 m^2 area
Franchise and Chain Services	1,480	1,980
Authorized Damage Repair Centers	12,210	13,180

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



- While authorized dealers are expected to decrease, the regulation mandating the Asian electric vehicle brands to open 20 new dealers is expected to drive the growth.
- Damage repair facilities are mainly the services that are under the network of insurance companies, where they have their own service parts chain.
- Independent services are gaining more attraction as the price concerns increasing due to price inflation, and ease of access due to wide-spread availability for quick fixes such as lighting bulbs, brake pads or tires. As technology advances and parts become more complex, specialized independent service shops will be gaining more importance.
- As of the end of 2023, Turkey had 59 light vehicle brands available for sale and the vehicle variety is expected to remain stable as new EV brands are being introduced to local market.
- Even though there is a mandate for number of dealers and services for electric vehicles, the operations of high voltage batteries and expansion to independent services are unclear.

Source: OYDER, Frost & Sullivan Analysis

TOP TURKISH AFTERMARKET SERVICE CENTER CHAINS

DIFFERENT LEVELS OF FRANCHISE MODELS AT THE INDEPENDENT SHOPS ARE EMERGING FROM A FULL FRANCHISEE TO A PARTIAL FRANCHISE.

Top Service Chains	Year Founded	Service Type	Centers (Approx.) 2014	Centers (Approx.) 2023
Bosch Car Service	2002	Regular maintenance and powertrain diagnostics	>200	380
Euromaster	2012	Tire and regular maintenance franchise	189	157
Eurorepar	2018	Regular maintenance and diagnostics	NA	162
Otopratik	2006	Maintenance, tire and electrical repairs	36	115
Castrol Auto Service	< 2019	Maintenance and repair	27	83
RS Servis	2008	Repair, regular maintenance	52	68
Nerex	2021	Maintenance, mechanical repairs	NA	62
Auto King	2001	Maintenance, repair and protection	49	55
Otto Zenith	2008	Repair and 7/24 roadside assistance	65	23
Midas	2004 (in France) new in Turkey	Maintenance, tire and electrical repairs	3	3

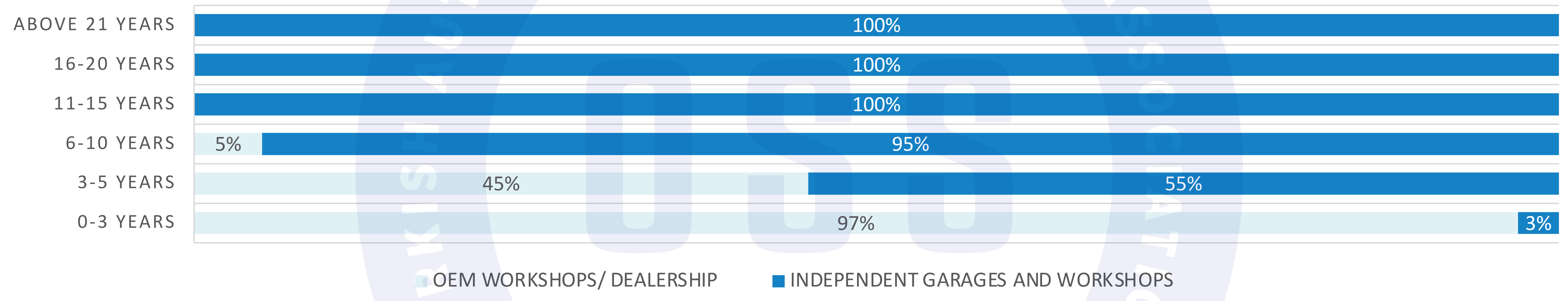
NA: Not applicable

Source: Frost & Sullivan Analysis

COMPETITIVE EVALUATION OF THE SERVICE INDUSTRY

WARRANTY DURATIONS SIGNIFICANTLY INFLUENCE THE PREFERENCE FOR ORIGINAL EQUIPMENT (OE) SERVICES, WITH INDEPENDENT GARAGES BECOMING DOMINANT IN THE AFTERMARKET SERVICE SECTOR FOR OLDER VEHICLES.

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



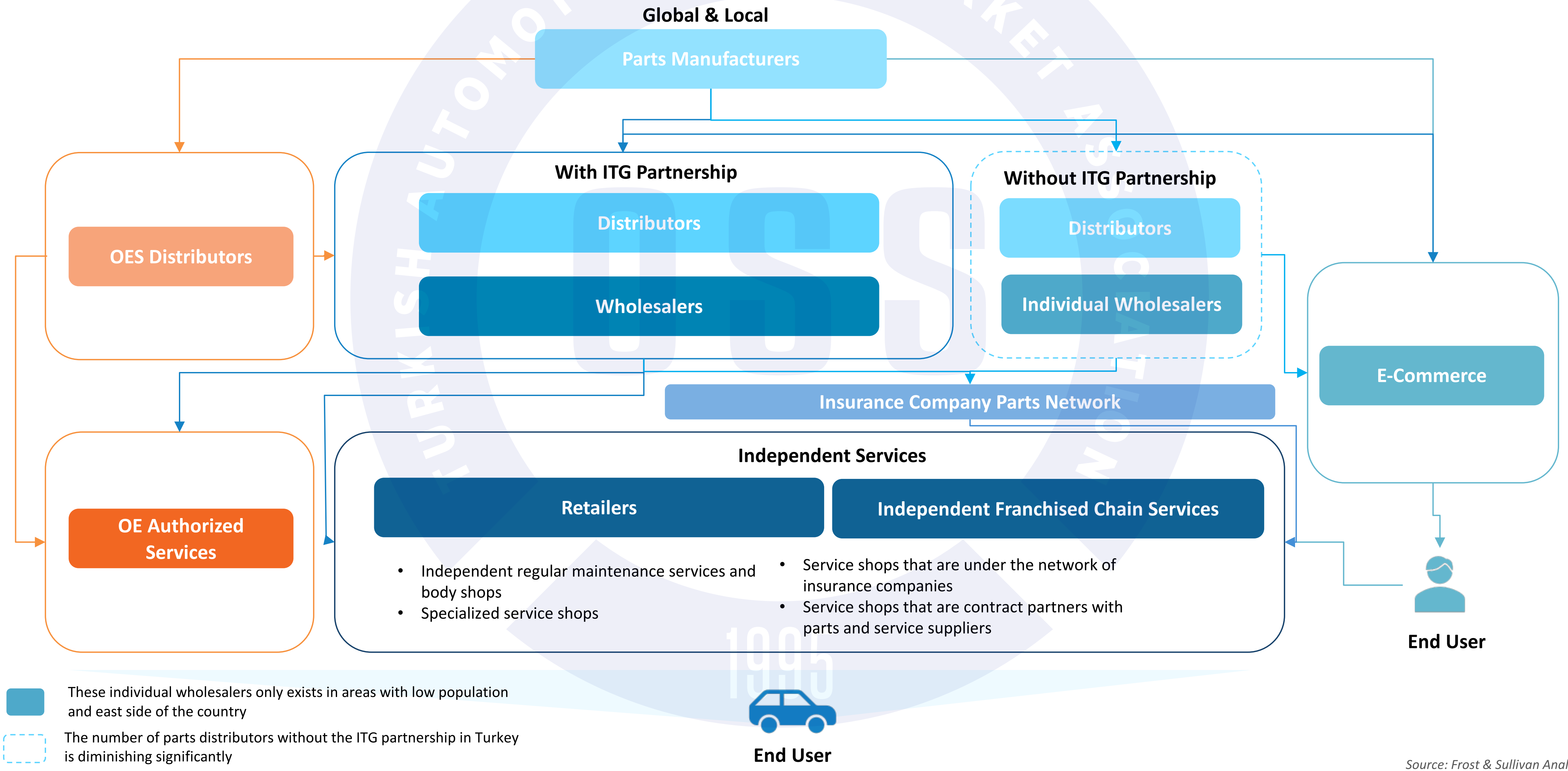
- While Hyundai and Ford provide extended warranties of 5 and 4 years, respectively, for their PC models, many other brands typically offer a standard 2-year manufacturing warranty. This warranty discrepancy significantly influences the preference for original equipment (OE) services among 0-3-year-old vehicles, with a decline to approximately 45% for OE services between 3 to 5 years old. Beyond 6 years old, independent garages dominate the aftermarket services landscape.
- Despite the warranty-driven usage patterns favoring OE services initially and the wear and tear of certain parts occurring after the 3-year mark, there remains a competitive market for independent services. However, latest price increases in certain imported parts such as drums will struggle services to obtain the parts .
- The competitive market for independent services is further fueled by the increasing complexity and specialization of automotive technology, with many vehicle components requiring specialized knowledge and equipment for maintenance and repair beyond the warranty period.

Source: Frost & Sullivan Analysis

DISTRIBUTION CHANNEL ANALYSIS

TURKISH AFTERMARKET DISTRIBUTION STRUCTURE

THE DISTRIBUTION CHANNEL IS CONSOLIDATING UNDER ITG PARTNERED DISTRIBUTORS AND THE NUMBER OF INDIVIDUAL WHOLESALERS ARE DIMINISHING.



These individual wholesalers only exists in areas with low population and east side of the country

The number of parts distributors without the ITG partnership in Turkey is diminishing significantly

Source: Frost & Sullivan Analysis

TOP TURKISH AFTERMARKET PARTS INTERNATIONAL TRADING GROUPS

SIX PRIMARY ITG'S WITH DISTRIBUTOR PARTNERS IN TURKEY ARE ENHANCING THEIR INTERNATIONAL IMPORT AND EXPORT CAPACITIES.

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 • Commercial vehicles	Altay, Davet, Oto Ismail, Ozas
ATR	2 shareholders	2018, 2003	• Light vehicles • Commercial vehicles	Martas, Rotas
Global One / Bircar	1 shareholder	2017	• Light vehicles	Ozcete
Groupauto International / Grup Oto	24 business partners (21 of them are LVs)	1992	• Light vehicles • Commercial vehicles	Delta, Mercanlar, Otokoc, Teknik Dizel
Nexus International & Nexus Eurosia	1 shareholder & 2 members	2014	• Light vehicles • Commercial vehicles	Dinamik Otomotiv, Genckaya, Simpar
Temot / Tatcom	8 shareholders & 2 members	2013	• Light vehicles • Commercial vehicles	Basbug, Motor Asin, Genel Oto

ITG's are listed alphabetically.

Source: Frost & Sullivan Analysis

TOP TURKISH AFTERMARKET PARTS KEY DISTRIBUTORS (1/2)

LOCAL PARTS DISTRIBUTORS TYPICALLY HAVE A LONG-STANDING PRESENCE IN THE INDUSTRY, OFFERING SOLUTIONS TO ALL REGIONS IN TURKEY.

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
Altay Otomotiv	1982	7	AD International / AD Ekol	2018	• Light vehicles • Commercial vehicles
Atak Tasit Yedekleri	1979	4	Independent / No ITG partnership	Not applicable	• Light vehicles
Basbug Oto	1974	12	Temot / Tatcom	2014	• Light vehicles
Davet Otomotiv	1993	6	AD International / AD Ekol	2018	• Light vehicles • Commercial vehicles
Delta Oto	1976	2	Groupauto International / Grup Oto	2019	• Light vehicles
Dinamik	1986	18	Nexus International & Nexus Eurosia	2014	• Light vehicles • Commercial vehicles
Genckaya Otomotiv	1999	2	Nexus International & Nexus Eurosia	2019	• Light vehicles • Commercial vehicles
Genel Oto	1954	7	Temot / Tatcom	2014	• Light vehicles • Commercial vehicles

Distributors are listed alphabetically.

Source: Frost & Sullivan Analysis

TOP TURKISH AFTERMARKET PARTS KEY DISTRIBUTORS (2/2)

ALTHOUGH THE PRIMARY FOCUS LIES IN LOCAL PART DISTRIBUTION, MOST DISTRIBUTORS POSSESS EXPORT CAPABILITIES TO CATER TO OTHER REGIONS' DEMANDS, OFTEN LEVERAGING LOCAL PRODUCTION RESOURCES.

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
Martas	1980	11	ATR	2018	• Light vehicles • Commercial vehicles
Mercanlar Otomotiv	1982	3	Groupauto International / Grup Oto	2013	• Light vehicles
Motor Asin	1971	6	Temot / Tatcom	2014	• Light vehicles • Commercial vehicles
Oto Ismail Otomotiv	1977	6	AD International / AD Ekol	2018	• Light vehicles
Ozas Otomotiv	1983	9	AD International / AD Ekol	2018	• Light vehicles
Ozcete Otomotiv	1978	6	Global One / Bircar	2017	• Light vehicles
Simpar Oto	1961	1	Nexus International & Nexus Eurosia	2022	• Light vehicles • Commercial vehicles
Teknik Dizel	1974	5	Groupauto International / Grup Oto	2022	• Light vehicles • Commercial vehicles

Distributors are listed alphabetically.

Source: Frost & Sullivan Analysis

COMPETITIVE EVALUATION OF DISTRIBUTION

THE TURKISH AUTOMOTIVE PARTS DISTRIBUTION INDUSTRY SHOWCASES A DYNAMIC ECOSYSTEM WHERE PARTNERSHIPS WITH INTERNATIONAL GROUPS, STRATEGIC EXPORT ACTIVITIES, AND THE GROWING INFLUENCE OF E-COMMERCE ARE RESHAPING SUPPLY CHAIN DYNAMICS AND MARKET PENETRATION STRATEGIES.

- In Turkey, there are six parts distribution groups dedicated to supporting the distribution of both independent and OE (Original Equipment) parts aftermarket import, and inventory and actual transportation of parts with own fleet of vehicles to wholesalers.
- Each of these groups maintains a significant focus on the OE parts business, with at least 35% of their operations dedicated to this segment.
- These distribution groups have established partnerships with International Trading Groups (ITGs), adding an international dimension to their operations. Additionally, there are a few independent distributors operating outside of these international affiliations.
- While distributors have been established since many years, their international trading partnership mostly happened in the last 10 years with the expansion efforts, increasing efficiency in consolidation.
- Export activities also play a substantial role in these distribution groups, with their main business partners predominantly being wholesalers, highlighting the interconnectedness of domestic and international markets in the parts distribution industry in Turkey. Especially the close border disputes around in recent years made Turkey an important hub for parts supply.

- Wholesalers and retailers have a unique position in assessing the demand of parts and models specifically required at a given time and holds the relationship for collecting payment around the designated areas of independent services at different cities. Average age of 14 years, forces many brands to keep inventory longer in the country.
- Especially on tires, filters, oil, accessories that are less complex parts and does not necessarily need for looking up chassis numbers are increasingly benefiting from e-commerce channels and estimated to be around 8% of sales. On the other hand, more complex parts like brakes, lighting, and suspension components are also experiencing growth in online sales. This growth is driven by a rise in the use of e-commerce platforms not only by individual consumers but also by masters and technicians in the automotive industry. These professionals are leveraging e-commerce platforms alongside traditional B2B channels to source and procure these intricate and critical parts for vehicle maintenance and repair purposes, estimated to be around 3% of sales. Tecdoc is used heavily as B2B platform.

Source: Frost & Sullivan Analysis

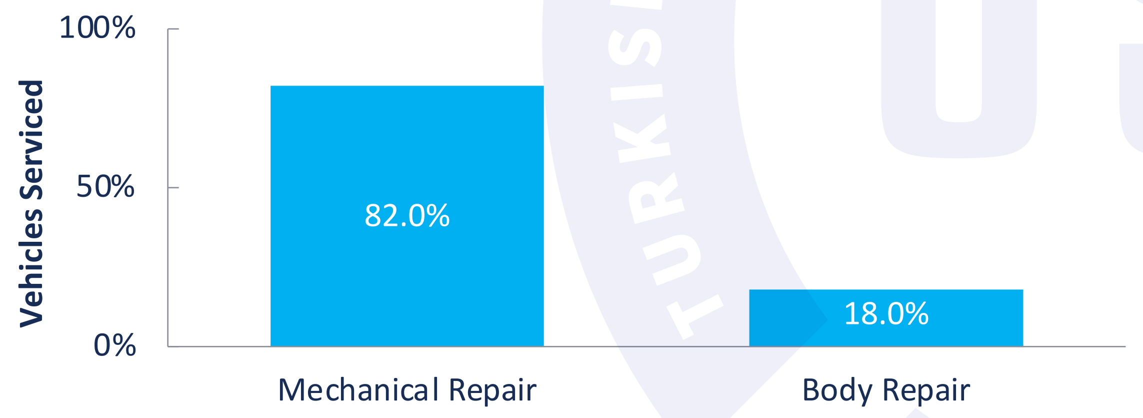
OES CHANNEL ANALYSIS

OES CHANNEL TRENDS

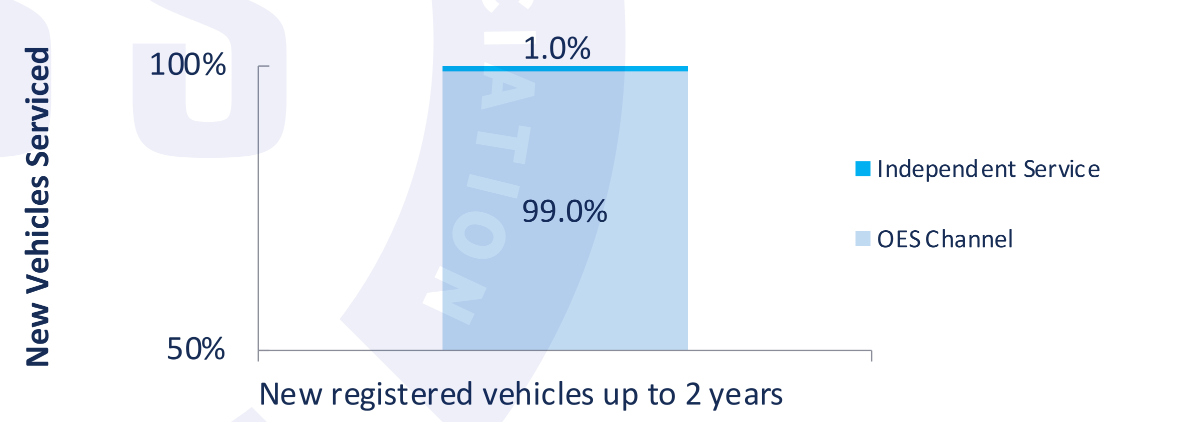
OES CHANNEL IS MAINTAINING UNDER WARRANTY PERIOD MAINTENANCE AND REPAIR SERVICES AND OLDER YEARS OF VEHICLES ARE EXPECTED TO UTILIZE MORE IF ELECTRIC POWERTRAIN.

- Despite increasing prices the usage of OE services are prioritized under warranty period, due to diminishing risk factor in case of mechanical brake down occurrence. There are 1,510 authorized dealers and services as of 2023 and the recent mandate to open minimum 20 dealers for Chinese brands is going to increase the availability of dealers.
- Independent service providers, particularly chain services, might possess the TSE 12047 certificate, enabling them to maintain warranties. However, a significant number of consumers are either unaware of this option or remain hesitant about its acceptance by OE services in the future.

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

- Only in rare occasions for certain accidents, or possible preference of owning TSE 12047 independent authorized services are utilized under warranty, currently very minimal.
- OES usage will become also important after 2 years time especially for electric vehicles.

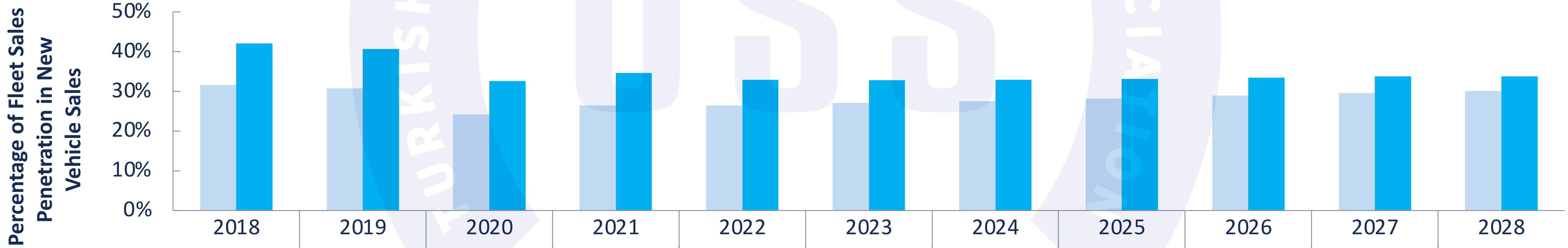
Source: Frost & Sullivan Analysis

OES CHANNEL TRENDS (CONTINUED)

FLEETS COVER 29% OF THE VEHICLE SALES IN TURKEY WITH 3-4 YEARS CONTRACT PERIOD ARE AN IMPORTANT PART OF AFTERMARKET SERVICES CREATING SUSTAINABLE BUSINESS.

- After a drop of fleet ratio in 2020 among light vehicle sales, there has been an uptake of fleet sales in 2023 especially for passenger vehicles while availability of LCV’s impacted 2022 fleet sales ratio to drop and this also recovered as of 2023.
- As there is no financial leasing in Turkey, all operational leasing vehicles are already subject to a contract with selected services for maintenance and repair needs. This includes also the network of insurance companies in case of an accident, that are commonly independent services if after-warranty.

Automotive Aftermarket: Percent of Fleets in New Vehicle Sales, Turkey, 2018-2028



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
PC	31.6%	30.8%	24.2%	26.4%	26.5%	27.1%	27.6%	28.1%	28.9%	29.6%	30.1%
LCV	42.0%	40.6%	32.6%	34.6%	32.9%	32.8%	32.9%	33.1%	33.4%	33.8%	33.8%

- While most fleets are still under 3 and 4 year contracts, the fixed price service agreements are recently being renewed in around 6 months intervals due to price inflation happening in both parts and labor.

Note: All figures are rounded. The base year is 2021.

Source: Frost & Sullivan Analysis

NEW CAR WARRANTIES (FROM OEMS)

AS VEHICLE TECHNOLOGY ADVANCES, WARRANTY PERIODS ARE INCREASING, WITH ELECTRIC VEHICLES LIKELY TO SEE A FURTHER EXTENSION OF 1-2 YEARS. THIS SHIFT EMPHASIZES THE IMPORTANCE OF FOCUSING ON OE SERVICES OVER REGULAR MAINTENANCE.

OEM	Example of Regional Authorized Chain Dealers & Services	Number of Dealers	Number of Services Points	Manufacturer Warranty Offer
Renault	Baday, Erdeger, Ernaz	149	146	For 2 years, unlimited km For three years 100,000 km & 150,000 km for Talisman and Koleos models
Fiat	ASF, Erkay, Kadioglu	102	130	3 years or 150,000km 5 years or 100,000km for Egea models
Volkswagen	Acarlar, Avek, Erel	72	81	2 years unlimited km
Ford	Cetinkayalar, Gurbaslar, Kar	81	81	4 years or 100,000km for PC 3 years unlimited km for LCV
Hyundai	Coskun, Fertan, Ucar	66	66	5 years or 100,000km
Opel	ABC, Gercek, Odak	63	63	3 years or 100,000km 2 years unlimited km for Vivaro and Movano models
Citroen	Antoto, Cetas, Mepa	63	63	3 years or 100,000km 2 years unlimited km for Jumpy and Jumper models
Peugeot	Bakircilar, Oztek, Odak	63	62	3 years or 100,000km 2 years unlimited km for Expert and Boxer models
Toyota	ALJ, Kale, Koskdere	61	61	3 years or 100,000 km for LCV
Mercedes Benz	Birollar, Koluman, Mengerler	37	57	2 years unlimited km, up to 4 years if taken service only from authorized services during first two years
BMW	Borusan, Kosifler, Ozgorkey	24	44	2 years unlimited km

OEMs are listed based on number of service points.

Source: Frost & Sullivan Analysis

OEM WARRANTY CONDITIONS

INCREASING WARRANTY YEARS ARE IMPACTING THE INDEPENDENT SERVICE SHOPS TO BE RESPONSIBLE FOR OLDER VEHICLES WHERE MARGINS ARE LOWER.

Warranty Type	Coverage	Impact on the Aftermarket
Manufacturer warranty	• Typically covers repairs or replacements of defective parts and may include labour costs. • In general, the offer is for 2 years, unlimited km. For EVs, it ranges from 4 to 8 years. E.g. Tesla: 4 years; MG: 7 years; Renault: 8 years.	• Increased focus on non-warranty repairs. • Incentivizes shops to explore offering-value added services such as maintenance packages and extended warranties.
Paint warranty	• Paint defects caused by manufacturing. • In general the offer ranges from 1 to 12 years. E.g. Tesla: 1 year; Renault: 3 years; Fiat: 3 years; Ford: 12 years.	• Focus on repairing damages on the vehicles paintwork that are not caused by manufacturer, such as those resulting from traffic accidents.
Anti – perforation warranty	• Correction or replacement of elements that have a deterioration caused by a manufacturing, material or workmanship error in the material. • In general the offer ranges from 6 to 12 years. E.g. Some Renault models: 6 years, Fiat: 8 years; Ford and Toyota: 12 years.	• Focus on repairing damages on the vehicles that are not caused by manufacturer, such as those resulting from traffic accidents.
High Voltage Battery warranty (For EVs)	• Repair or replacement for any manufacturing defects. • In general the offer is 8 years of warranty. E.g. Tesla, Nissan, Hyundai, Ford: 8 years; Kia: 5 years.	• High impact to independent services for the mid age vehicles services. This is a long term trend due to battery technical capability and repair is very limited at the moment.

Source: Frost & Sullivan Analysis

WARRANTIES IN THE AFTERMARKET (CONTINUED)

EXTENDED WARRANTY IS INCREASING THE LIFE OF VEHICLES COMING TO THE OE SHOPS INCREASING DEALER SERVICE WARRANTY.

Warranty Type	Coverage	Impact on the Aftermarket
Extended service warranty	• It becomes effective upon the expiration of the manufacturer's warranty under which the vehicle was purchased 1-2 years of warranty extension. • All kinds of production-related problems and malfunctions that may arise in the vehicle during use are covered.	• Medium impact for vehicles generally up to 5 years/ • Increased competition for non-warranty repairs. • Repair shops to specialize in services that are not covered in extended service warranty e.g. Cosmetics and performance upgrades.
Short duration warranty	• There are no short term warranty policies is offered in the market currently.	• Currently no impact.

- Extended warranty services are frequently provided due to the reduced risk of failure as vehicles incorporate more advanced technology, allowing for software-based diagnostics to detect potential issues.

Source: Frost & Sullivan Analysis

TURKISH AUTOMOTIVE AFTERMARKET ASSOCIATION OSS 1995

REGULATORY INFLUENCES

AUTOMOTIVE AFTERMARKET—KEY REGULATIONS, 2023

WINTER TIRE MANDATE INCREASES ANNUAL TIRE BUSINESS AT THE SHOPS AND PROVIDE SAFETY FOR THE ROADS IN TURKEY WHERE A MOUNTAINOUS TERRAIN IS COMMON AND 4X4 VEHICLES ARE LESS.

Legislative Topic	Overview	
Winter Tire for Commercial Vehicles	• Under the scope of the regulations of the Ministry of Transport and Infrastructure of Turkish Republic, during the period between December 1st and April 1st, it is mandatory for all commercial vehicles to use winter tires. • Commercial vehicle drivers who do not use winter tires within this period are charged a penalty of 4,069 TL.	
Periodical Inspection	• Periodical inspections are mandatory according to Article 34 of the Highway Traffic Law No.2918 by the Grand National Assembly of Turkey. • These inspections are carried out by TÜVTÜRK, the only authorized organization. • In vehicles that have been inspected and failed, TÜVTÜRK determines the deficiencies and gives 1 month to complete these deficiencies. Within this 1 month, the deficiencies must be completed, and the examination must be repeated.	
Motor Vehicle Insurances	• Traffic Insurance/Liability Insurance (Mandatory)	• Mandatory Traffic Insurance is an insurance product that the state requires for all motor vehicle owners. It insures drivers against any damage they may cause to other vehicles or third parties as a result of an accident.
	• KASKO / Comprehensive Liability Insurance (Optional)	• Kasko is a type of insurance that insures the owner and their vehicle against all kinds of risks they may encounter in traffic.

Source: Frost & Sullivan Analysis

AUTOMOTIVE AFTERMARKET—KEY REGULATIONS, 2023

EMISSIONS, QUALITY OF PARTS, AND OIL ARE THE MOST REGULATED TOPICS IN THE TURKISH AFTERMARKET TO ENSURE INNOVATION, QUALITY AND STANDARDS TO BE IN PLACE.

Legislative Topic	Overview
Adoption of EU Regulation 443/2009 (Emission Standards)	• The objective is to reduce CO2 emissions from light-duty vehicles while ensuring the proper functioning of the internal market. • In this respect, the EU should pursue the objective of a 30% reduction of greenhouse gas emissions by developed countries. • One other implication of the required commitments of this regulation is that all Member States need to reduce emissions from passenger cars significantly. • Another aim of this regulation is to create incentives for the car industry to invest in new technologies.
Adoption of EU Regulation 461/2010 (Block Exemption Act)	• The motor vehicle sector, including passenger cars and commercial vehicles, has been subject to specific block exemption regulations since 1985. The most recent one is No 1400/2002, which expired on 31 May 2010. Therefore, No 461/2010 is a continuation. • It is concerned with the distribution of new motor vehicles, the distribution of spare parts and the provision of repair and maintenance services for motor vehicles. • It aims to ensure competitive circumstances in the motor vehicle aftermarket by ensuring authorized and independent repairers have a share in the market.
MoYDeN (Engine Oil Change Centers)	• MoYDeN is a permit certificate for engine oil change centers. • According to Waste Oil Management Regulation No. 30985 dated 21.12.2019 by the Environment and Urban Ministry of the Turkish Republic, businesses that perform engine oil changes must obtain a permit from the provincial directorate and register for the Ministry's online programs. • The company performing the engine oil change must enter the vehicle's license plate, brand, type, engine oil change date, current mileage, added oil, and amount of waste oil into the system. • Since the date cannot be changed in the MoYDeN system, the relevant information must be recorded on the day the change is made.

Source: Frost & Sullivan Analysis

CONCLUSIONS

KEY CONCLUSIONS

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INCREASING COMPLEXITY of PARTS	• As independent aftermarket (IAM) quality improved while maintaining competitive prices, the competition with Original Equipment (OE) parts intensified over the last decade. This pressure led OE manufacturers to produce increasingly intricate parts that are challenging to replicate. • Advancements in technology further enabled OE manufacturers to create customized parts for specific models, shifting the landscape from shared parts across models to each brand and nearly every model having its distinct components. Consequently, this trend is driving the necessity for each brand to ensure diverse parts availability in local markets and made it even more challenging for individual wholesalers to maintain this variety.
CUSTOMER CENTRIC SERVICES	• In urban areas, there is a growing demand for mobile servicing, particularly for fleet and rental cars, focusing on tire and oil changes. This trend is expected to influence the emergence of new business models for both original equipment (OE) providers and independent service chains. • The rise of independent franchise services is also enhancing customer satisfaction, with the potential to offer pick-up and drop-off services, providing end-users with a range of convenient options to choose from.
RESHAPING PRICING STRATEGIES	• Increasing costs stemming from raw materials, fuel-related transportation expenses, import regulations leading to higher taxes, and Turkey's inflationary pressures are collectively affecting the affordability of specific parts at both wholesale and retail levels. This situation may pose challenges for smaller companies in acquiring new parts due to limited access to financing amid these conditions and further consolidation may occur.

Source: Frost & Sullivan Analysis

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TURKISH AUTOMOTIVE AFTERMARKET ASSOCIATION

THANK YOU

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