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## Research Report

# FDZ Data Description: Data on the Used Car Market in Europe (RWI-GEO-CARMKT V2) - Used Car Listings on AutoScout24 01/2019 - 12/2024

RWI Datenbeschreibung

## Provided in Cooperation with:

RWI – Leibniz-Institut für Wirtschaftsforschung, Essen

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RWI – Leibniz-Institut für Wirtschaftsforschung

**FDZ Data Description: Data on the Used Car  
Market in Europe (RWI-GEO-CARMKT V2) -  
Used Car Listings on AutoScout24  
01/2019 - 12/2024**

**Helena Rahaus and Patrick Thiel**

August 2025

# Impressum

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**FDZ Data Description: Data on the Used Car Market in Europe  
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01/2019 - 12/2024**

August 2025

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## Contents

|                                             |           |
|---------------------------------------------|-----------|
| <b>List of Figures</b>                      | <b>4</b>  |
| <b>List of Tables</b>                       | <b>4</b>  |
| <b>Abstract</b>                             | <b>5</b>  |
| <b>1 Introduction and Short Description</b> | <b>6</b>  |
| 1.1 Introduction                            | 6         |
| 1.2 Short Description                       | 7         |
| 1.3 List of Variables                       | 7         |
| 1.4 Data Access                             | 8         |
| <b>2 Data Preparation</b>                   | <b>9</b>  |
| 2.1 Data Source                             | 9         |
| 2.2 Anonymization                           | 9         |
| 2.3 Missings                                | 9         |
| 2.4 Data Problems                           | 11        |
| <b>3 Variable Description</b>               | <b>12</b> |
| 3.1 Identifier                              | 12        |
| 3.2 Features Related to Exterior            | 12        |
| 3.3 Features Related to Interior            | 13        |
| 3.4 Features Related to Price               | 14        |
| 3.5 Generated Features                      | 15        |
| 3.6 Regional Information                    | 15        |
| 3.7 Temporal Information                    | 16        |
| 3.8 Vehicle Characteristics                 | 16        |
| 3.9 Other Features                          | 17        |
| <b>4 Changes Between Versions</b>           | <b>18</b> |
| <b>5 Further Material</b>                   | <b>19</b> |
| <b>6 References</b>                         | <b>20</b> |

## List of Figures

## List of Tables

|    |                                                                           |    |
|----|---------------------------------------------------------------------------|----|
| 1  | Data Overview . . . . .                                                   | 7  |
| 2  | List of Variables . . . . .                                               | 7  |
| 3  | Missing Values Classification . . . . .                                   | 9  |
| 4  | Censoring Thresholds for Implausible Values . . . . .                     | 10 |
| 5  | Detailed Variable Descriptions for Identifiers . . . . .                  | 12 |
| 6  | Detailed Variable Descriptions for Features Related to Exterior . . . . . | 12 |
| 7  | Detailed Variable Descriptions for Features related to Interior . . . . . | 13 |
| 8  | Detailed Variable Descriptions for Features Related to Price . . . . .    | 14 |
| 9  | Detailed Variable Descriptions for Generated Features . . . . .           | 15 |
| 10 | Detailed Variable Descriptions for Regional Information . . . . .         | 15 |
| 11 | Detailed Variable Descriptions for Temporal Information . . . . .         | 16 |
| 12 | Detailed Variable Descriptions for Vehicle Characteristics . . . . .      | 16 |
| 13 | Detailed Variable Descriptions for Other Features . . . . .               | 17 |

### **Abstract**

The FDZ Ruhr provides a dataset on car advertisements in Europe, drawing from information obtained from the online marketplace AutoScout24. The dataset includes a diverse range of vehicle listings, covering various manufacturers, models, fuel types, and other key characteristics. The dataset offers detailed regional information and a comprehensive set of attributes, making it suitable for analyzing car market trends, pricing, and consumer preferences. It is important to note that the data are available for scientific research purposes only.

This data report provides an overview of the dataset, its structure, limitations, and key details. It is intended to support (potential) users in preparing and utilizing the data for research purposes.

This data report refers to RWI-GEO-CARMKT V2, which covers data from 01/2019 to 12/2024 and includes currently the country of Germany.

## 1. Introduction and Short Description

### 1.1. Introduction

The research data center (FDZ) Ruhr at the RWI provides a unique dataset on the European car market, obtained from AutoScout24. The dataset contains information on car listings, including advertised prices and various vehicle characteristics that influence a car's market value. The data is collected on a regular basis, with the present dataset (V2) covering 01/2019 to 12/2024.<sup>1</sup>

AutoScout24 is one of the largest online marketplaces for vehicles in Europe, enabling both private individuals and professional dealerships to advertise their cars. The platform covers a wide range of vehicles, from compact cars to luxury models, across multiple countries.<sup>2</sup> Listings on AutoScout24 include extensive details about each vehicle, including price, mileage, model specifications, and optional features. RWI-GEO-CARMKT only includes listings for used cars.

To list a vehicle, sellers complete a standardized form that captures key attributes such as brand, model, fuel type, and power output. The advertised price represents the seller's asking price and does not necessarily reflect final transaction prices. While price data is available for nearly all listings, additional details depend on seller input, leading to some variation in data completeness.

The dataset is distinguished by its broad coverage of the online car market, setting it apart from other automotive datasets. Several key features highlight its value:

Firstly, the dataset is extensive, comprising approximately 30,820,104 observations in the latest version (V2). Regular updates ensure a continuously growing database, facilitating in-depth analyses of market trends and consumer preferences.

Secondly, RWI-GEO-CARMKT provides detailed listing information. With 38 variables available, researchers can analyze key factors such as pricing, fuel types, transmission types, and regional market differences. This allows for flexibility in tailoring the data to specific research needs.

Thirdly, the dataset offers high-resolution geographical and temporal data. Each listing includes location information on the zip-code level, enabling spatial analyses of car market trends. In addition, each observation includes the listing date, allowing for daily analysis.

This data description is an updated version of Thiel (2025). Therefore, there are several text parts that are the same.

---

<sup>1</sup>It should be noted that the temporal coverage indicates active listings during the specified period. This does not necessarily imply that the listed vehicles were registered or that the advertisements themselves were created during that particular interval.

<sup>2</sup>The current version of RWI-GEO-CARMKT (V2) only includes listings from Germany, but other countries like France and Italy will be added in future versions.

## 1.2. Short Description

Table 1

### Data Overview

|                    |                                                                  |
|--------------------|------------------------------------------------------------------|
| Data unit          | Used car sale listings offered on AutoScout24                    |
| Included countries | Germany                                                          |
| Period covered     | 01/2019 until 12/2024                                            |
| Time reference     | Daily                                                            |
| Regional structure | Zip-code information of seller                                   |
| Sample             | Full population of all used car listings offered on the platform |
| Update frequency   | Continuously                                                     |
| Data access        | Available for scientific research only                           |
| Current version    | 01/2019–31/2024 V2.0                                             |

## 1.3. List of Variables

The dataset contains the following variables.

Table 2

### List of Variables

| Variable                     | Variable name          | Variable label                                 | Variable type |
|------------------------------|------------------------|------------------------------------------------|---------------|
| Identifiers                  | ofid                   | Identifier for the listing                     | character     |
|                              | uniqueID_gen           | Unique identifier (RWI)                        | numeric       |
| Features related to exterior | body_color             | Body color of the car                          | character     |
|                              | num_doors              | Number of doors of the car                     | numeric       |
|                              | co2_emissions          | CO <sub>2</sub> emissions of the car (in g/km) | numeric       |
|                              | efficiency_class       | Efficiency class of the car                    | character     |
|                              | emission_class         | Emission class of the car                      | character     |
|                              | emission_sticker       | Emission sticker of the car                    | character     |
|                              | fuel_consumption_city  | Fuel consumption within city (in l/km)         | numeric       |
|                              | fuel_consumption_mixed | Mixed fuel consumption (in l/km)               | numeric       |
|                              | fuel_consumption_rural | Fuel consumption outside city (in l/km)        | numeric       |
| Features related to interior | fuel_type              | Fuel type of the car                           | character     |
|                              | equipment_first        | First listed equipment of the car              | character     |
|                              | interior_color         | Interior color of the car                      | character     |
|                              | seats                  | Number of seats of the car                     | numeric       |
|                              | cylinders              | Number of cylinders of the car                 | numeric       |
|                              | displacement           | Displacement of the car (in cc)                | numeric       |
|                              | gears                  | Number of gears of the car                     | numeric       |

|                           |                     |                                            |             |
|---------------------------|---------------------|--------------------------------------------|-------------|
| Features related to price | power               | Power of the car (in kW)                   | numeric     |
|                           | transmission        | Transmission type of the car               | character   |
|                           | asking_price        | Indicator for price being asking price     | categorical |
|                           | price               | Price of the car                           | numeric     |
| Generated features        | vat_deductible      | Indicator for VAT being deductible         | categorical |
|                           | carmkt_delivery     | Classification of data delivery period     | character   |
|                           | carmkt_version      | Classification of data version             | character   |
| Regional information      | city                | City of the seller                         | character   |
|                           | country_code        | Label for country of the seller            | character   |
|                           | country_zip_code    | Country zip-code combination of the seller | character   |
|                           | zipcode             | Zip-code of the seller                     | character   |
| Temporal information      | created_date        | Creation date of the listing               | character   |
|                           | first_registration  | First registration date of the car         | character   |
| Vehicle characteristics   | brand               | Brand of the car                           | character   |
|                           | mileage             | Mileage of the car (in km)                 | numeric     |
|                           | model               | Model of the car                           | character   |
|                           | vehicle_type        | Type of the vehicle                        | character   |
|                           | weight              | Weight of the car (in kg)                  | numeric     |
| Other features            | num_previous_owners | Number of previous owners of the car       | numeric     |
|                           | provider_type       | Type of the provider                       | character   |

#### 1.4. Data Access

The data are available to researchers for non-commercial use. The data can be obtained in both .csv and .parquet file formats. It should be noted that data access to both versions requires a signed data use agreement. Both versions are restricted to non-commercial research; only researchers from scientific institutions are eligible to apply for data access.

Data access is provided by the Research Data Centre Ruhr at the RWI – Leibniz-Institute for Economic Research (FDZ Ruhr). The data can be accessed at <https://www.rwi-essen.de/en/research-advice/further/research-data-center-ruhr-fdz/data-access>. The application form includes a brief description and title of the project, potential cooperation, information on the applying department, expected duration of data usage as well as further participants in the project.

Data users shall cite the datasets properly with the respective DOIs. The DOIs of the current version (V2) of the dataset is:

**Scientific Use File (SUF)**

10.7807/as24:carmkt:suf:v2

## 2. Data Preparation

### 2.1. Data Source

The FDZ Ruhr at the RWI acquires the raw data directly from AutoScout24 in the form of spell data, wherein a spell denotes an advertisement. The FDZ Ruhr at the RWI procures all active advertisements of used car listings between two deliveries.

Users submit information regarding their car offers. The platform is available to both private and commercial users (i.e., car dealers), who can utilize it for the purpose of advertising their offers. These users are guided through an online questionnaire to create their advertisements. The majority of the questionnaire's fields are mandatory, including but not limited to brand, model, price, and mileage. Optional information encompasses the number of previous owners and equipment. Furthermore, it is possible to add a brief description as well as picture to the listing. It is important to note that we do not obtain the name and contact information of the user who has placed the advertisement, nor do we receive the description and pictures of the car.

Listing a vehicle for sale on AutoScout24 is a free service. However, AutoScout24 also offers premium features that increase the visibility of the advertisement for a limited time. It should be noted that the obtained raw data does not provide insight into whether an advertisement has been designated as a premium feature.

### 2.2. Anonymization

We do not implement additional anonymization procedures. The rationale and origins of this decision are rooted in the inherent characteristics of the data structure. Firstly, the raw data set does not contain any personally identifiable information but rather encompasses information relevant to the listed vehicle. Secondly, the smallest regional unit is the zip code information of the seller. It is important to acknowledge that the provided zip code does not necessarily correspond to the seller's actual residence; rather, it signifies the location and point of sale of the vehicle in question. This discrepancy in geographical location decreases the probability that a specific individual could be matched with the sold car and, consequently, could be re-identified. Thirdly, the dataset consists of a considerable amount of data points, which would scale any efforts to re-identify person-related information.

### 2.3. Missings

Missing values are consistently encoded in the following manner:

Table 3  
Missing Values Classification

| Value | Description                             |
|-------|-----------------------------------------|
| -5    | Implausible value (set by FDZ Ruhr RWI) |
| -6    | Not available for specific delivery     |
| -7    | Not specified                           |
| -9    | Other missing                           |

We employ a data-driven approach to censor implausible values for numerical variables, which

we encode as -5, as they appear to be the result of typing errors (see Table 4 for details). However, it is plausible that there are still typing errors and implausible values remaining. Unlike in surveys, there is no interviewer to assist in the measurement process, which suggests that the prevalence of mismeasured values may be higher than in standard surveys. However, it is not possible to identify these values with certainty.

Table 4

**Censoring Thresholds for Implausible Values**

| Variable               | Threshold | Threshold type | Value     |
|------------------------|-----------|----------------|-----------|
| price                  | 0.001     | percentile     | 250.00    |
| price                  | 0.999     | percentile     | 389980.00 |
| mileage                | 0.001     | percentile     | 2.00      |
| mileage                | 0.999     | percentile     | 520000.00 |
| power                  | 0.001     | percentile     | 25.00     |
| power                  | 0.999     | percentile     | 519.97    |
| co2emissions           | 0.001     | percentile     | 23.00     |
| co2emissions           | 0.999     | percentile     | 373.00    |
| cylinders              | 0.001     | percentile     | 1.00      |
| cylinders              | 0.999     | percentile     | 10.00     |
| displacement           | 0.001     | percentile     | 505.00    |
| displacement           | 0.999     | percentile     | 6262.00   |
| equipmentidfirst       | 0.001     | percentile     | 1.00      |
| equipmentidfirst       | 0.999     | percentile     | 217.00    |
| fuelconsumptioncity    | 0.001     | percentile     | 1.40      |
| fuelconsumptioncity    | 0.999     | percentile     | 24.10     |
| fuelconsumptioncountry | 0.001     | percentile     | 1.50      |
| fuelconsumptioncountry | 0.999     | percentile     | 12.90     |
| fuelconsumptionmixed   | 0.001     | percentile     | 1.10      |
| fuelconsumptionmixed   | 0.999     | percentile     | 16.20     |
| gears                  | 0.001     | percentile     | 1.00      |
| gears                  | 0.999     | percentile     | 9.00      |
| numberofdoors          | 0.001     | percentile     | 2.00      |
| numberofdoors          | 0.999     | percentile     | 5.00      |
| previousowners         | 0.001     | percentile     | 1.00      |
| previousowners         | 0.999     | percentile     | 5.00      |
| seats                  | 0.001     | percentile     | 2.00      |
| seats                  | 0.999     | percentile     | 9.00      |
| weight                 | 0.001     | percentile     | 720.00    |
| weight                 | 0.999     | percentile     | 3000.00   |

Notes: Values outside these thresholds have been recoded as implausible (-5).

Missing data encoded as -6 indicates variables that are not part of the delivery. -7 represents entries where the user chose not to provide additional information regarding the listing. -9 summarizes all other types of missings.

### 2.4. Data Problems

This section discusses issues the user should be aware of when working with the data.

#### **Lack of observations**

Since most information is not mandatory, some variables are only filled for few observations.

#### **Partial cleaning and other notes**

**City.** In addition to the zip code indicating the vehicle's location, RWI-GEO-CARMKT also provides the city of the seller as the next largest regional unit. The city variable has undergone a process of refinement, resulting in the elimination of implausible values that are readily apparent, such as those comprising solely numerals or the characters like "-" and "...". However, it is possible that less obvious implausible values remain part of the dataset. The responsibility for determining the appropriate course of action in such instances rests with the researcher.

### 3. Variable Description

Each variable is described below. The variables are arranged by category.

#### 3.1. Identifier

Table 5

**Detailed Variable Descriptions for Identifiers**

| Feature     | Description                                                                                                                                                                                                                                     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Label       | Identifier for the listing                                                                                                                                                                                                                      |
| Name        | ofid                                                                                                                                                                                                                                            |
| Data type   | Character                                                                                                                                                                                                                                       |
| Description | Each listing is distinguished by a unique artificial ID number. These IDs are specific to each listing and remain constant over time. However, it is possible to pause an offer so that the offer ID (ofid) reappears in subsequent deliveries. |
| Label       | Unique identifier (RWI)                                                                                                                                                                                                                         |
| Name        | uniqueID_gen                                                                                                                                                                                                                                    |
| Data type   | Numeric                                                                                                                                                                                                                                         |
| Description | <i>uniqueID_gen</i> is a unique identifier for each advertisement. It has been artificially generated and is defined as a running ID.                                                                                                           |

#### 3.2. Features Related to Exterior

Table 6

**Detailed Variable Descriptions for Features Related to Exterior**

| Feature     | Description                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Label       | Body color of the car                                                                                          |
| Name        | body_color                                                                                                     |
| Data type   | Character                                                                                                      |
| Description | <i>body_color</i> is a character variable, indicating the main exterior color of the car.                      |
| Label       | Number of doors of the car                                                                                     |
| Name        | num_doors                                                                                                      |
| Data type   | Numeric                                                                                                        |
| Description | <i>num_doors</i> is a numeric variable which refers to the number of doors of the car.                         |
| Label       | CO <sub>2</sub> emissions of the car (in g/km)                                                                 |
| Name        | co2_emissions                                                                                                  |
| Data type   | Numeric                                                                                                        |
| Description | <i>co2_emissions</i> is a numeric variable, denoting the emitted CO <sub>2</sub> emissions of the car in g/km. |
| Label       | Efficiency class of the car                                                                                    |
| Name        | efficiency_class                                                                                               |
| Data type   | Character                                                                                                      |

|             |                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>efficiency_class</i> is a character variable that categorizes the car's fuel efficiency based on regulatory standards.                                                                                   |
| Label       | Emission class of the car                                                                                                                                                                                   |
| Name        | <i>emission_class</i>                                                                                                                                                                                       |
| Data type   | Character                                                                                                                                                                                                   |
| Description | <i>emission_class</i> is a character variable that represents the car's emission standard, indicating compliance with environmental regulations (e.g., Euro 6).                                             |
| Label       | Emission sticker of the car                                                                                                                                                                                 |
| Name        | <i>emission_sticker</i>                                                                                                                                                                                     |
| Data type   | Character                                                                                                                                                                                                   |
| Description | <i>emission_sticker</i> is a character variable that specifies the environmental sticker classification assigned to the car, typically used in low-emission zones.                                          |
| Label       | Fuel consumption within city (l/km)                                                                                                                                                                         |
| Name        | <i>fuel_consumption_city</i>                                                                                                                                                                                |
| Data type   | Numeric                                                                                                                                                                                                     |
| Description | <i>fuel_consumption_city</i> is a numeric variable that represents the car's fuel consumption in urban driving conditions, measured in liters per kilometer (l/km).                                         |
| Label       | Mixed fuel consumption (l/km)                                                                                                                                                                               |
| Name        | <i>fuel_consumption_mixed</i>                                                                                                                                                                               |
| Data type   | Numeric                                                                                                                                                                                                     |
| Description | <i>fuel_consumption_mixed</i> is a numeric variable that represents the car's average fuel consumption under a combination of city and highway driving conditions, measured in liters per kilometer (l/km). |
| Label       | Fuel consumption outside city (l/km)                                                                                                                                                                        |
| Name        | <i>fuel_consumption_rural</i>                                                                                                                                                                               |
| Data type   | Numeric                                                                                                                                                                                                     |
| Description | <i>fuel_consumption_rural</i> is a numeric variable that represents the car's fuel consumption in outside-city driving conditions, measured in liters per kilometer (l/km).                                 |
| Label       | Fuel type of the car                                                                                                                                                                                        |
| Name        | <i>fuel_type</i>                                                                                                                                                                                            |
| Data type   | Character                                                                                                                                                                                                   |
| Description | <i>fuel_type</i> is a character variable that specifies the type of fuel the car uses, such as petrol, diesel, electric, or hybrid.                                                                         |

### 3.3. Features Related to Interior

Table 7  
Detailed Variable Descriptions for Features related to Interior

| Feature | Description                       |
|---------|-----------------------------------|
| Label   | First listed equipment of the car |
| Name    | <i>equipment_first</i>            |

|             |                                                                                                                                                   |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Data type   | Character                                                                                                                                         |
| Description | <i>equipment_first</i> is a character variable listing the first mentioned equipment of the car.                                                  |
| Label       | Interior color of the car                                                                                                                         |
| Name        | <i>interior_color</i>                                                                                                                             |
| Data type   | Character                                                                                                                                         |
| Description | <i>interior_color</i> is a character variable that specifies the color of the vehicle's interior.                                                 |
| Label       | Number of seats of the car                                                                                                                        |
| Name        | <i>seats</i>                                                                                                                                      |
| Data type   | Numeric                                                                                                                                           |
| Description | <i>seats</i> is a numeric variable representing the number of seats in the vehicle.                                                               |
| Label       | Number of cylinders of the car                                                                                                                    |
| Name        | <i>cylinders</i>                                                                                                                                  |
| Data type   | Numeric                                                                                                                                           |
| Description | <i>cylinders</i> is a numeric variable representing the number of cylinders in the vehicle's engine.                                              |
| Label       | Displacement of the car (in cc)                                                                                                                   |
| Name        | <i>displacement</i>                                                                                                                               |
| Data type   | Numeric                                                                                                                                           |
| Description | <i>displacement</i> is a numeric variable that indicates the total volume of all the cylinders in the engine, measured in cubic centimeters (cc). |
| Label       | Number of gears of the car                                                                                                                        |
| Name        | <i>gears</i>                                                                                                                                      |
| Data type   | Numeric                                                                                                                                           |
| Description | <i>gears</i> is a numeric variable representing the number of gears in the vehicle's transmission system.                                         |
| Label       | Power of the car (in kW)                                                                                                                          |
| Name        | <i>power</i>                                                                                                                                      |
| Data type   | Numeric                                                                                                                                           |
| Description | <i>power</i> is a numeric variable indicating the engine's power output, measured in kilowatt (kW).                                               |
| Label       | Transmission type of the car                                                                                                                      |
| Name        | <i>transmission</i>                                                                                                                               |
| Data type   | Character                                                                                                                                         |
| Description | <i>transmission</i> is a character variable that specifies the type of transmission in the vehicle, such as manual, automatic, or semi-automatic. |

### 3.4. Features Related to Price

Table 8  
Detailed Variable Descriptions for Features Related to Price

| Feature | Description |
|---------|-------------|
|---------|-------------|

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Label       | Indicator for price being asking price                                                                         |
| Name        | asking_price                                                                                                   |
| Data type   | Categorical                                                                                                    |
| Description | <i>asking_price</i> is a categorical variable indicating whether the listed price is an asking price.          |
| Label       | Price of the car                                                                                               |
| Name        | price                                                                                                          |
| Data type   | Numeric                                                                                                        |
| Description | <i>price</i> is a numeric variable representing the listed price of the vehicle in the advertisement.          |
| Label       | Indicator for VAT being deductible                                                                             |
| Name        | vat_deductible                                                                                                 |
| Data type   | Categorical                                                                                                    |
| Description | <i>vat_deductible</i> is a categorical variable indicating whether the price of the vehicle is VAT-deductible. |

### 3.5. Generated Features

Table 9

**Detailed Variable Descriptions for Generated Features**

| Feature     | Description                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Label       | Classification of data delivery period                                                                                                                 |
| Name        | carmkt_delivery                                                                                                                                        |
| Data type   | Character                                                                                                                                              |
| Description | <i>carmkt_delivery</i> is a character variable indicating the delivery the observations belongs to. This variable has more internal than external use. |
| Label       | Classification of data version                                                                                                                         |
| Name        | carmkt_version                                                                                                                                         |
| Data type   | Character                                                                                                                                              |
| Description | <i>carmkt_version</i> is a character variable representing the specific version of the dataset. This variable has more internal than external use.     |

### 3.6. Regional Information

Table 10

**Detailed Variable Descriptions for Regional Information**

| Feature     | Description                                                                                        |
|-------------|----------------------------------------------------------------------------------------------------|
| Label       | City of the seller                                                                                 |
| Name        | city                                                                                               |
| Data type   | Character                                                                                          |
| Description | <i>city</i> is a character variable representing the name of the city where the vehicle is listed. |

|             |                                                                                                                        |
|-------------|------------------------------------------------------------------------------------------------------------------------|
| Label       | Label for country of the seller                                                                                        |
| Name        | country_code                                                                                                           |
| Data type   | Character                                                                                                              |
| Description | <i>country_code</i> is a character variable containing the country code of the listing.                                |
| Label       | Country zip-code combination of the seller                                                                             |
| Name        | country_zip_code                                                                                                       |
| Data type   | Character                                                                                                              |
| Description | <i>country_zip_code</i> is a character variable that provides the country-specific postal code of the vehicle listing. |
| Label       | Zip-code of the seller                                                                                                 |
| Name        | zipcode                                                                                                                |
| Data type   | Character                                                                                                              |
| Description | <i>zipcode</i> is a character variable representing the postal code of the listing location.                           |

### 3.7. Temporal Information

Table 11  
Detailed Variable Descriptions for Temporal Information

| Feature     | Description                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------|
| Label       | Creation date of the listing                                                                                            |
| Name        | created_date                                                                                                            |
| Data type   | Character                                                                                                               |
| Description | <i>created_date</i> is a character variable representing the date when the vehicle listing was created on the platform. |
| Label       | First registration date of the car                                                                                      |
| Name        | first_registration                                                                                                      |
| Data type   | Character                                                                                                               |
| Description | <i>first_registration</i> is a character variable indicating the date of the vehicle's first registration.              |

### 3.8. Vehicle Characteristics

Table 12  
Detailed Variable Descriptions for Vehicle Characteristics

| Feature     | Description                                                                                 |
|-------------|---------------------------------------------------------------------------------------------|
| Label       | Brand of the car                                                                            |
| Name        | brand                                                                                       |
| Data type   | Character                                                                                   |
| Description | <i>brand</i> is a character variable representing the manufacturer or brand of the vehicle. |
| Label       | Mileage of the car (in km)                                                                  |
| Name        | mileage                                                                                     |
| Data type   | Numeric                                                                                     |

|             |                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------|
| Description | <i>mileage</i> is a numeric variable indicating the total distance the vehicle has traveled, measured in kilometers (km). |
| Label       | Model of the car                                                                                                          |
| Name        | model                                                                                                                     |
| Data type   | Character                                                                                                                 |
| Description | <i>model</i> is a character variable specifying the model name of the vehicle.                                            |
| Label       | Type of the vehicle                                                                                                       |
| Name        | vehicle_type                                                                                                              |
| Data type   | Character                                                                                                                 |
| Description | <i>vehicle_type</i> is a character variable categorizing the type of vehicle, such as sedan, SUV, or convertible.         |
| Label       | Weight of the car (in kg)                                                                                                 |
| Name        | weight                                                                                                                    |
| Data type   | Numeric                                                                                                                   |
| Description | <i>weight</i> is a numeric variable indicating the vehicle's weight in kilograms (kg).                                    |

### 3.9. Other Features

Table 13  
Detailed Variable Descriptions for Other Features

| Feature     | Description                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Label       | Number of previous owners of the car                                                                               |
| Name        | num_previous_owners                                                                                                |
| Data type   | Numeric                                                                                                            |
| Description | <i>num_previous_owners</i> is a numeric variable representing the number of previous owners the vehicle has had.   |
| Label       | Type of the provider                                                                                               |
| Name        | provider_type                                                                                                      |
| Data type   | Character                                                                                                          |
| Description | <i>provider_type</i> is a character variable indicating the type of provider, such as dealership or private seller |

#### **4. Changes Between Versions**

This section describes briefly the changes made between the current version (V1) and the previous version (V2). Other changes between earlier versions can be found in previous data reports.

The observation period was adjusted. Version V1 lists housing objects from January up to June 2024. Version V2 extends the period to January 2019 up to December 2024.

### 5. Further Material

Users might find the coding for the data preparation useful. Please refer to our GitHub repository (<https://github.com/PThie/RWI-GEO-AS24>), which should be cited as: Patrick Thiel (2025). PThie/RWI-GEO-AS24: RWI-GEO-CARMKT V2 (V2.0). Zenodo. <https://doi.org/10.5281/16918103>.

The variable and value labels are also delivered to the user as separate files, in conjunction with the dataset files.

## 6. References

Thiel, P. (2025). FDZ Data Description: Data on the Used Car Market in Europe (RWI-GEO-CARMKT V1) - Used Car Listings on AutoScout24 01/2024 - 06/2024, RWI Projektberichte, Essen.