EBAY-Group Presentation
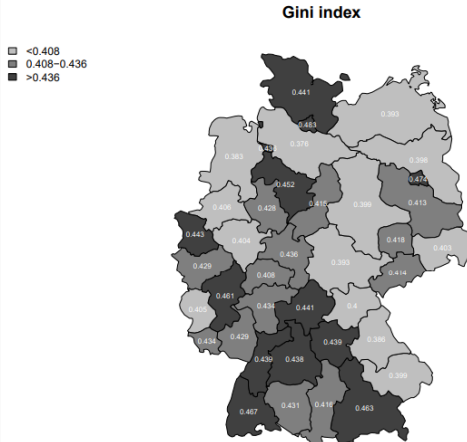
Bamberg Summer Institute in Computational Social Science

2019-08-08

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Kholodilin, K. & Siliverstovs, B. (2012) Measuring Regional Inequality by Internet Car Price Advertisements: Evidence for Germany.

Figure 7: Gini coefficient (based on car prices, mobile.de); NUTS2

Gini index

Research Question
Do economic disparities between German cities/regions influence the prices of used cars?

Hypothesis:
The higher a city's GDP per capita, the higher is the expected price of used automobiles.

Data Scraping

Sample

Five cities (+50km): Munich, Jena, Düsseldorf, Stuttgart, and Deggendorf

Sample
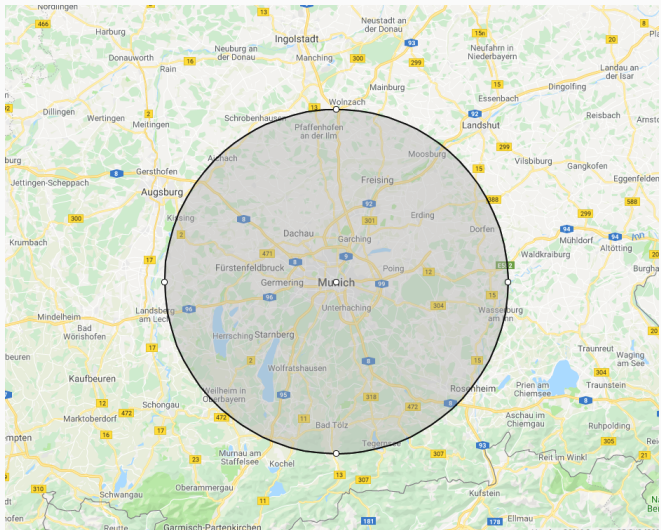
24 representative car models (top registrations per class in 2010)

Car model	Car class	Car model	Car class
Smart-Fortwo	minis	Mercedes-Benz-E	upper middle class car
Fiat-Panda	minis	BMW-5er	upper middle class car
Renault-Twingo	minis	Audi-A6	upper middle class car
VW-Polo	small	Mercedes-Benz-S	upper class car
Opel-Corsa	small	BMW-7er	upper class car
Ford-Fiesta	small	Audi-A8	upper class car
Opel-Astra	compact class	Mercedes-Benz-E	sports-car
Audi-A3	compact class	BMW-Z4	sports-car
VW-Golf	compact class	Porsche-911	sports-car
Mercedes-Benz-C	middle class car	VW-Tiguan	SUV
BMW-3er	middle class car	BMW-X1	SUV
VW-Passat	middle class car	Audi-Q5	SUV

(source: Kraftfahrtbundesamt)

Data

Scraped variables:

- Model & class
- Price
- Description
- Location
- Age & mileage

Merged with macroeconomic indicators:

- GDP per capita
- Household income per capita
- Car thefts per capita

Workflow

📖 **Studentenfutter** / **cars-inequality**

| 👁 Watch ▾ | 1 | | ★ Star | 0 | | 🍴 Fork | 0 |

| ‹› Code | ⓘ Issues `0` | ⑂ Pull requests `0` | 🗖 Projects `0` | 📖 Wiki | 🛡 Security | 📊 Insights |

Group project for SICSS 2019

| 🕒 **75 commits** | ⑂ **1 branch** | 🏷 **0 releases** | 👥 **3 contributors** |

| Branch: master ▾ | New pull request | | | Create new file | Upload files | Find File | Clone or download ▾ |

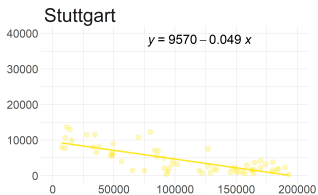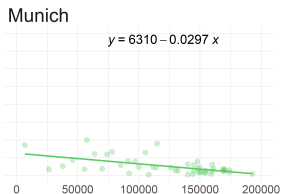| 👤 johnny80y update presentation markdown		Latest commit `fe9ef17` 1 hour ago
📁 data	Update data cleaning and ebay_clean	2 hours ago
📁 presentation	update presentation markdown	1 hour ago
📁 vis	Update data cleaning and ebay_clean	2 hours ago
📄 .gitignore	Initial commit	3 days ago
📄 Grouping.R	Update data cleaning and ebay_clean	2 hours ago
📄 README.md	Initial commit	3 days ago
📄 app.R	removed shiny files locally	15 hours ago
📄 cars-inequality.Rproj	first edits on presentation	2 days ago
📄 carthefts.R	Added visualizations	4 hours ago
📄 clustering.R	Further analyses for presentation	20 hours ago

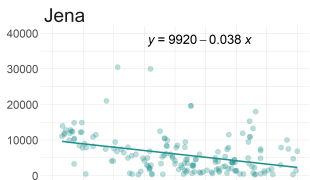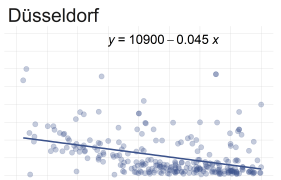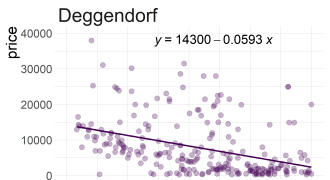1. • Data scraping
2. • Data processing
3. • Matching with other indicators (ZIP-code level)
4. • Regression
5. • Mapping / visualization

Analysis

OLS: (price $\sim$ cities $+$ mileage $+$ age $+$ gdp_pc)

**Regression on effects on price
with Deggendorf as a reference category**

Mean of car price by county

Map Visualization

https://cloud.sowi.uni-
due.de/index.php/s/37LjkxP7DCe4j36
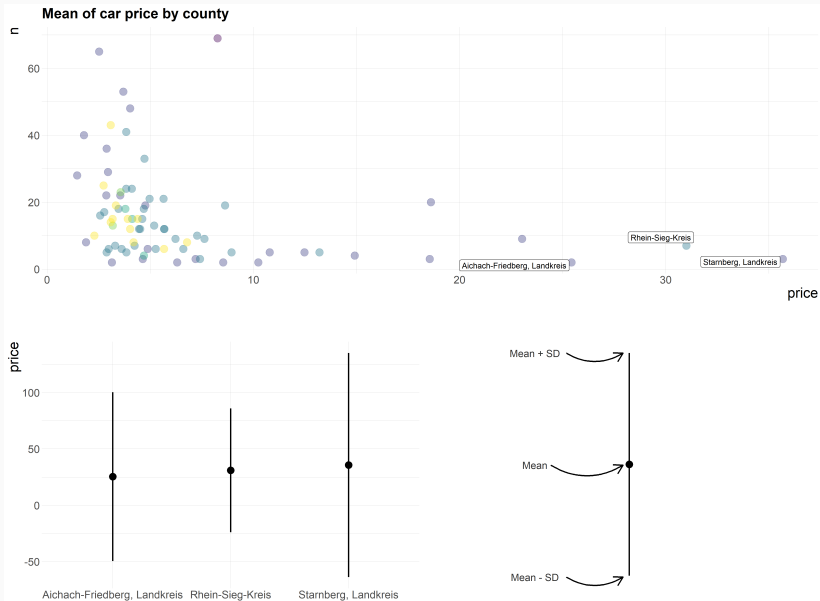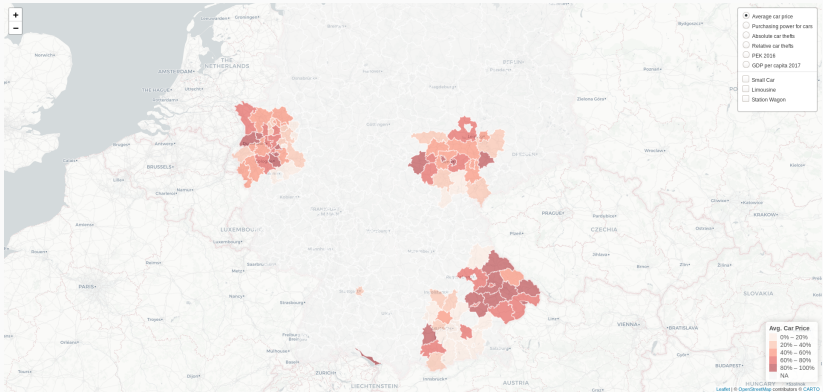
Next Steps

- Extend data collection (more cities, car models, other products)
- Access APIs of other platforms
- Include additional control variables (condition, configurations, etc.)

Application

- Tool for policy advisors
- Potential robustness test for consumer index measures (purchasing power)
- Tool for prospective car sellers/buyers

Sources:

- Kholodilin, K. A., & Siliverstovs, B. (2012) Measuring regional inequality by internet car price advertisements: Evidence for Germany. Economics Letters, 116(3), 414-417. www-sre.wu.ac.at/ersa/ersaconfs/ersa12/e120821aFinal00913.pdf.
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- Kraftfahrtbundesamt (2011) Neuzulassungen von Personenkraftwagen nach Segmenten und Modellreihen im Dezember 2010 `https://web.archive.org/web/20140531110101/http://www.kba.de/DE/Presse/Presseportal/N_Segmente_Modellreihen_FZ11/N_Segmente2010/n_seg_12_10_pdf`.

Sources:

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  www.serp-perception.com/umkreissuche.php.
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  und Städte) Übersicht Falltabellen, Grundtabelle - Kreise -
  ausgewählte Straftaten/-gruppen.
  www.bka.de/DE/AktuelleInformationen/StatistikenLagebilder/Polize

Reproduceability

https://github.com/Studentenfutter/cars-inequality