

Third Assignment

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1 Research question and project description

In our collaborative research project, we seek to provide an answer to the following question: **How the rise in the rise in inequality and economic growth influences the purchase of luxury goods, particularly cars, and the usage of public transportation systems in Singapore, from 1995 to 2014.** Therefore, we collected data on economic growth, income inequality, usage of public transports and purchase of cars covering the time span of 29 years, from 1995 until 2014. As suggested by our research question, economic growth, income inequality and usage of public transports are the explanatory variables, while purchase of cars is the dependent variable. The reason why we chose cars as example of luxury goods showing social status, is that in Singapore purchasing of cars is particularly expensive, due to high taxation and a certificate of car entitlement, whose cost can be higher than 70.000 dollars. For more details about the research proposal and case justification see [ResearchProposal](#).

2 Processing data

2.1 Data sources and data gathering

The data that we need for our empirical analysis are to be retrieved from different sources:

- IMF Cross Country Macroeconomic Statistics open data, containing cross-country macroeconomic data. From this source we downloaded the dataset on Singapore GDP per Capita at Current Prices measured in national currency from 1995 until 2014. Data were downloaded in csv format from [Quandl](#), a website providing high-quality financial and economic data in different formats to facilitate data analysis.
- [Knoema](#), a knowledge platform connecting data with analytical and presentation tools, in order to allow users to access, present and share data-driven content. From The World Top Incomes Database - providing access to data on the distribution of top incomes in more than twenty five countries across the globe - we downloaded data on the top 10% average income and bottom 90% average income in Singapore, to be compared in order to understand how many times the top 10% average income is higher than the bottom 90%. Since data were available only until 2009, the values of bottom 90% and top 10% average income between 2010 and 2014 were forecasted with a linear regression. The reason why we did not gather data from the database [Clio Infra](#) available on Quandl as we had defined in our [ResearchProposal](#), is that it did not provide sufficient data for the time span we are considering.
- PUBLIC TRANSPORTS
- PURCHASE OF CARS

2.2 Cleaning, processing and merging of datasets

After importing data on R and cleaning them, we merged the datasets. The final dataset has nineteen observations, and eleven variables, observed throughout the years 1995 - 2014.

3 Descriptive and inferential statistics

4 Creating a summary table

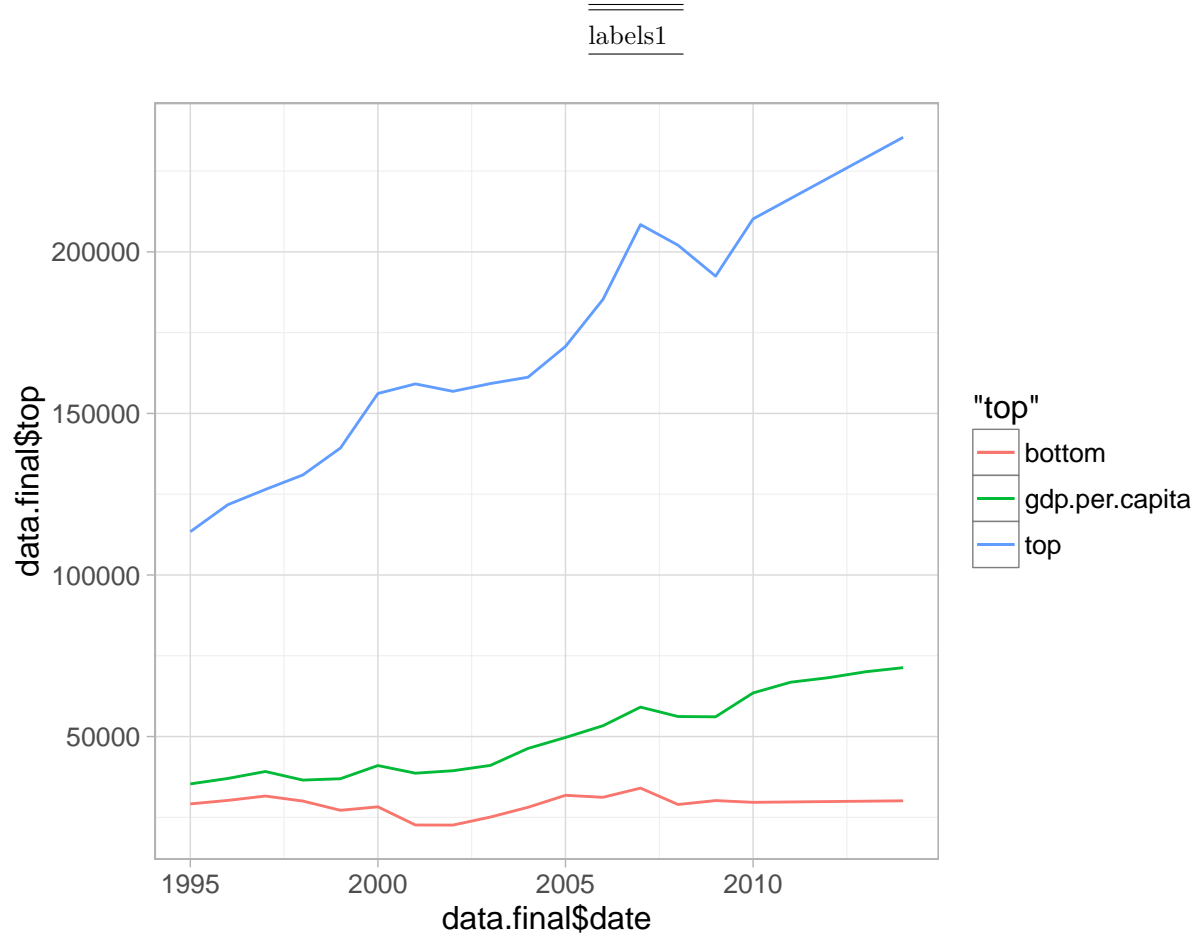
% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, Apr 13, 2016 - 22:15:50

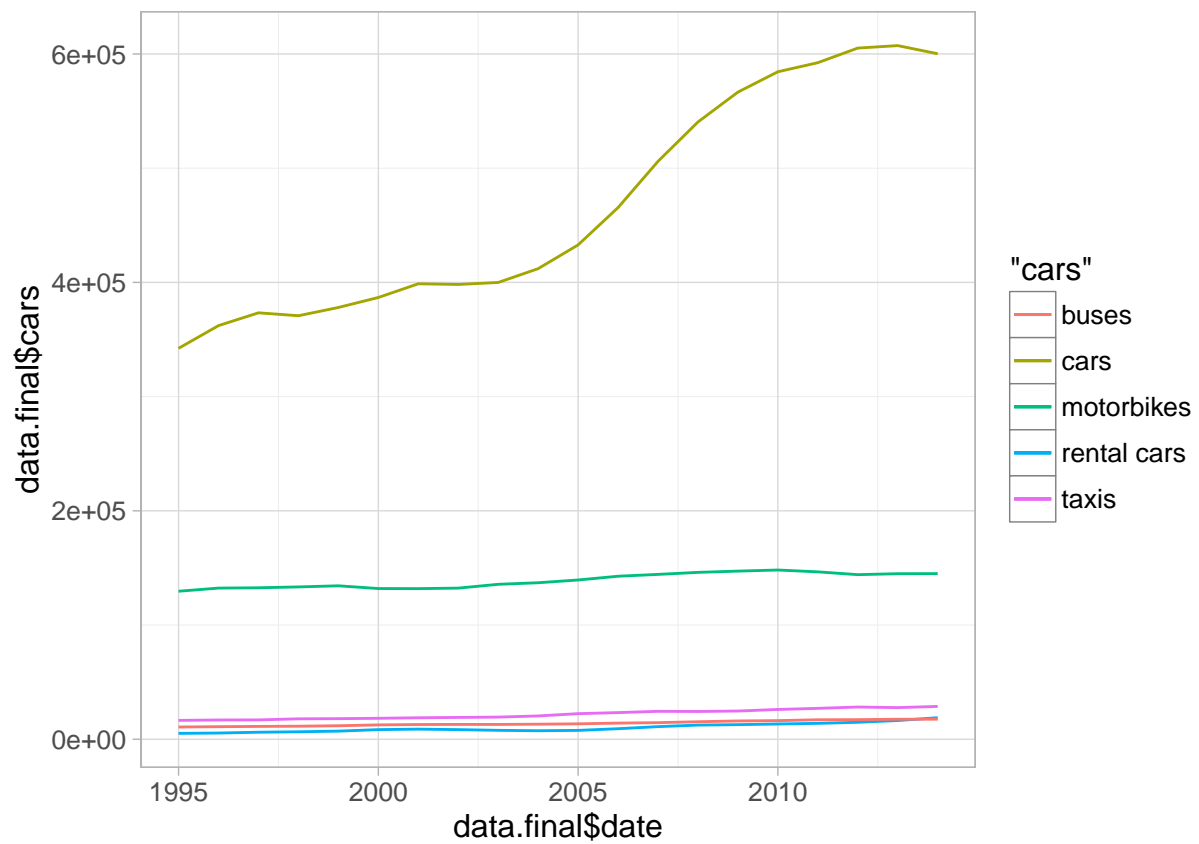
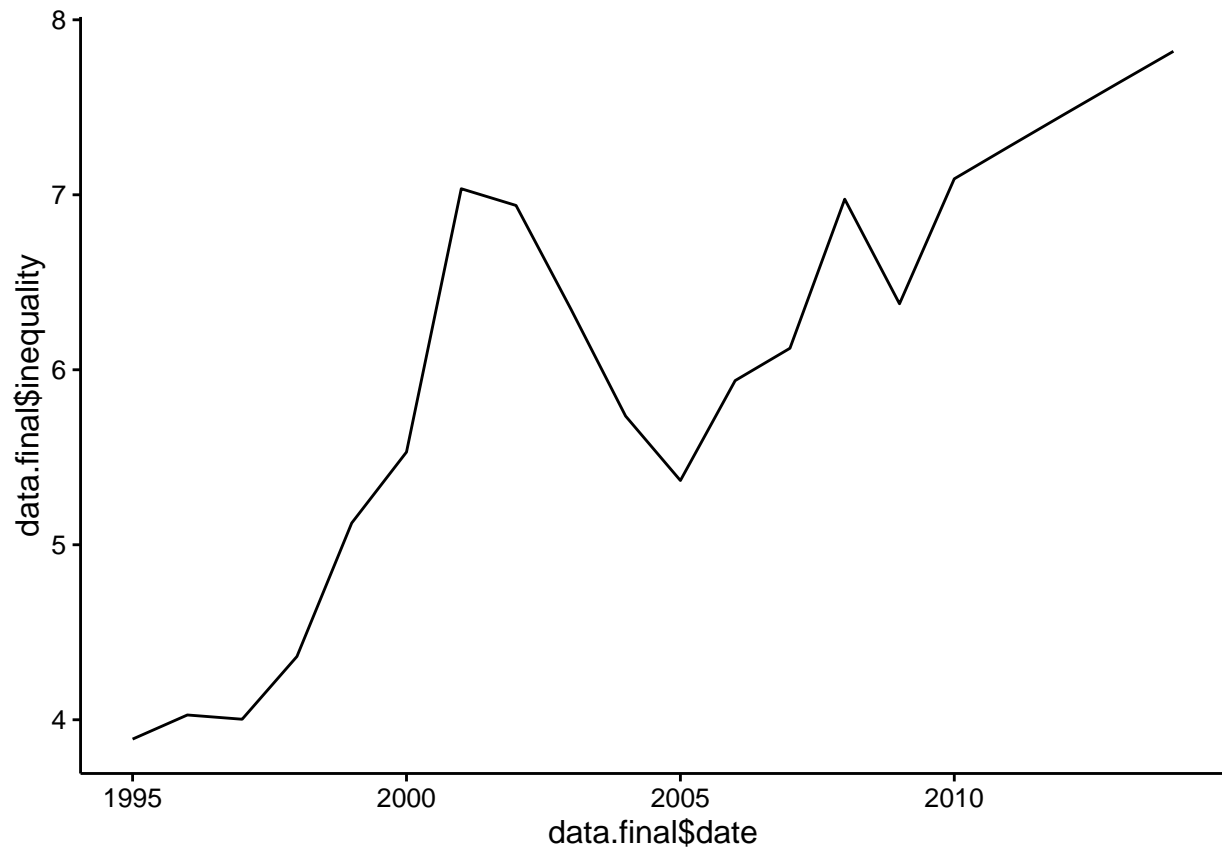
Table 1: General data summary

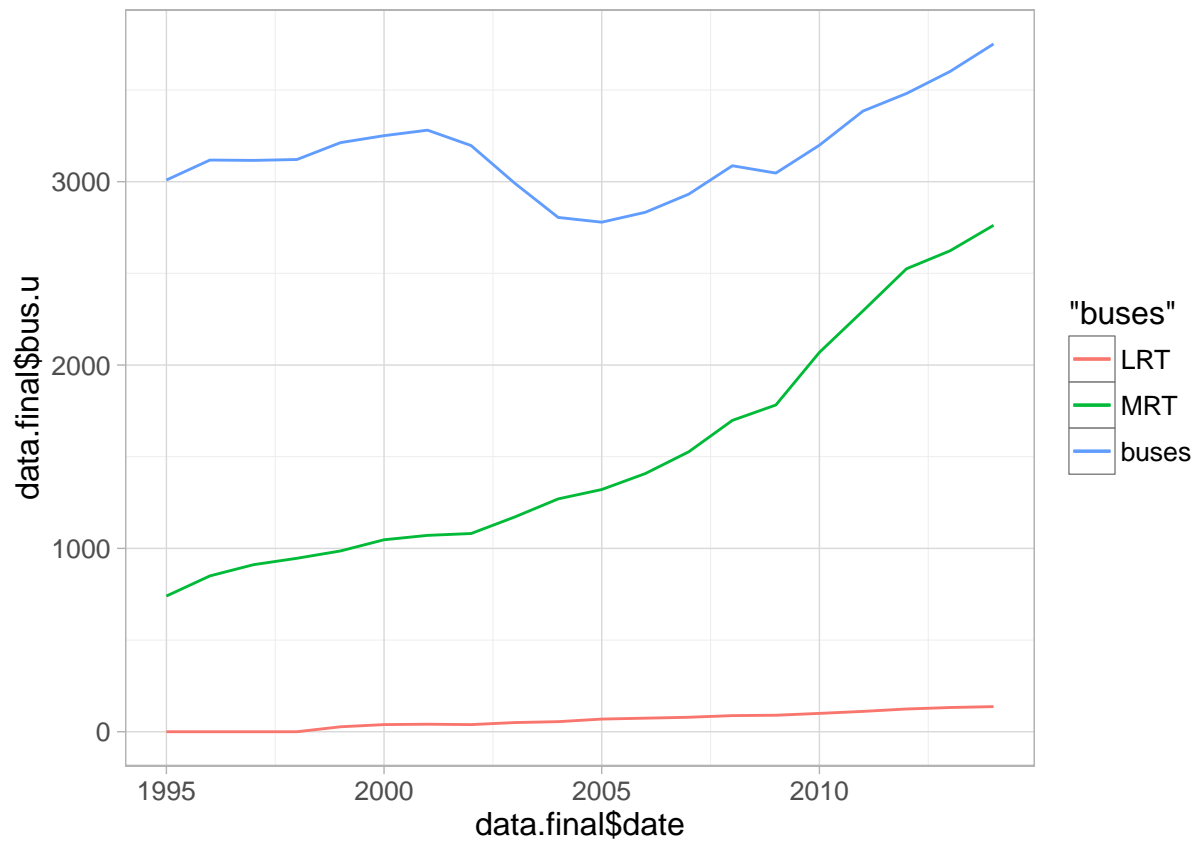
Statistic	N	Mean	St. Dev.	Min	Max
date	20	2,004.5	5.9	1,995	2,014
gdp.per.capita	20	50,294.8	12,748.0	35,345.5	71,317.9
inequality	20	6.1	1.3	3.9	7.8
cars	20	466,148.3	97,290.5	342,245	607,292
rentalcars	20	10,097.0	3,881.3	5,144	18,847
taxis	20	21,958.7	4,201.0	16,517	28,736
buses	20	13,993.9	2,302.3	10,723	17,554
motorbikes	20	138,985.9	6,435.2	129,587	148,160
other	20	146,548.7	10,180.8	134,756	161,698
bus.u	20	3,159.9	254.5	2,779	3,751
mrt.u	20	1,504.2	635.1	740	2,762
top	20	174,881.0	38,176.0	113,402.5	235,450.0
bottom	20	29,022.2	2,851.4	22,602.4	34,043.3
lrt.u	20	62.8	45.0	0	137

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
 % Date and time: Wed, Apr 13, 2016 - 22:15:50

Table 2: General data summary







5 Creating a trend graph for ineauqlity and GDP

References