# The factors that determine retail fuel prices

Econometrics Empirical Groupe Assignment

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Introduction:

In this assignment our task was to prepare an essay for submission within the framework of the Econometrics subject, in which we identify the factors that determine retail fuel prices at the station level on data containing fuel prices for all Hungarian stations for a randomly selected week. The assignment was written and presented in a group of three. During the research, we first identify the relevant factors that influence fuel prices, then analyse the data and variables describing these factors, which, for the sake of easier utilization, are put trough on several data cleaning processes and transformations. To make it easier to create a model that best describes the problem, we tried different models and select based on several critical factors. Finally, we presented the main results of the submission in the conclusion.

At the beginning of our research, we first examined the data for the week assigned to us (Dataset of 2024.04.11-04.17) to define the main factors behind gas and diesel prices all around Hungary. We identified two main components, the company and the location of the fuel station. The first one contains more than 100 fuel station owner companies, from multinational big firms like Mol or Shell, to small family businesses with only one station. Therefore, we assume that this huge different could lead to difference in prices. The second factor, the location is more complicated. We think this is the main component behind the fuel prices. On one hand because it is important what features a fuel station have, like based on our own experience a station on a highway or in Budapest is more expensive. On the other hand, the location of the city also contains important economical factors like wage, what can impact prices, or car density, what can impact demand in the region.

Data/Data clearing:

Minimise potential data problems so prepare the weekly average price per station, data collection, data cleaning, transformation

Modelling:

Estimate different regression models and discuss the parameter estimates and the explanatory power of the model. Carefully interpret the results and draw conclusions about which factors are important in determining fuel prices and which are less important. Which is the best model? model 3 for both?

Conclusion:

Differences observed between gasoline and diesel, main results, summary of what we did

GitHub repository:

Link: <https://github.com/Lecsak014/Econ_empirical_assignment.git>

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