***Germany’s Market Transparency Unit for Fuels: Fostering Collusion Or competition?***

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## Overview

A large literature already analyse market power in the retail gasoline market. Accordingly, a report by the Federal Cartel Office came to the conclusion that the German market is dominated by five oligopolists (FCO, 2011). Therefore, to increase the intensity of competition and dampen prices for consumers for retail gasoline, in 2013, the Federal Cartel Office established a publicly accessible, mandatory on-line price disclosure portal for gasoline prices, the so-called Market Transparency Unit for Fuels (MTU).

However, from a theoretical perspective this outcome of the introduction of the MTU is not trivial. Schultz (2005) derives theoretical conditions in which increased market transparency actually might lead to less competition: On the on hand – as desired – sustaining tacit collusion can become tougher, as the benefits of undercutting the competitors prices increase with more market transparency, but on the other hand in a state where tacit collusion persits, punishment for deviating from the optimal outcome can also be observed more easily by other oligopolists and therefore punished quicker and tougher.

In the German market, a study by Frondel et al. (2018) investigates whether the introduction of the MTU has changed price cycles in the German gasoline market. The authors find that before the introduction of the price portal German gasoline price exhibited the classic “rockets and feathers”-pattern, while in the aftermath of the introduction this was not the case anymore. The study concludes that this reverse in the price pattern resulted in stronger competition between German gasoline stations and therefore price savings for consumers.

While the study by Frondel et al. (2018) is rather long-term orientated the present analysis investigates immediate price and price margin changes of German gas station following the introduction of the MTU. To this end, we use a fixed effects regression to analyze these changes. In addition, a Difference-in-Difference approach is used as a robustness check.

## Methods

In this analysis we use data on gasoline prices and the wholesale price of refined fuel out of Rotterdam, where the major pipelines into Germany originates. We use two different sources for the gasoline prices. On the one hand, the official MTU data, which records all posted prices from the whole set of German gasoline stations, starting in a beta phase from September 25th 2013 onwards on top of a number of station specific characteristics, such as the brand of the station, its geographical coordinates, and opening hours. To pursue our aim of comparing how prices changed for individual stations before and after the introduction of the MTU, we additionally draw on another data set that was assembled by Kihm et al. (2016) covering a time-span before the introduction of the MTU. This data set comprises retail fuel prices retrieved from the sitewww.clevertanken.de, which is currently one of a handful of sites in Germany that publishes real time data from the MTU.

Finally, we merge the two data sets using the stations’ locations and brands. In this regard we append the MTU data from September 25th, 2013 onwards on the Clevertanken data. In line with Frondel et al. (2018) we ensure that we have an identical set of stations before and after the introduction of the MTU. The final data set consists of 1,620,637 observations of 6,384 stations.

The main variables of interest are the fuel price net of taxes and the margin of each station. For the calculation of the price margins, we subtract the Rotterdam refined gasoline import price, which is the main input factor to retail gasoline, from the daily average prices of each gasoline station in Germany. In addition, as a robustness check, we use more aggregate data from 19 EU countries, using the Weekly Oil Bulletin provided by the European Commission. In both data sets we restrict use a time period from 2012 until 2014.

In the baseline regression we use a simple fixed effects approach identifying a before-after MTU comparison using a dummy. Subsequently, in order to check how the MTU-effect evolves over time we replace this with indicators for dates after the introduction of the MTU. In both cases we include station specific fixed effects as well as standard errors, which are clustered on the station level.

Finally, in order to check the causality of our results, we use the EU weekly data result to estimate a Difference-in-Difference-Regression. Here we compare the treatment country Germany with a group of 18 other European countries in order to causally estimate the effect of the MTU introduction on price margins in Germany.

## Results

Already the first baseline fixed effects estimation gives a first indication that the price margins have decreased with the introduction of the MTU. The specifications exhibit a reduction of price margins of German gasoline station of round about 2 cents per liter. Considering that the mean of the price margins is at about 8.7 cents per liter this is a rather high effect of about 20%. Additionally, we find a negative effect of increases in the Brent price on price margins, which suggests that with higher input prices firms cannot pass on the total input price increases but only a share.

With the second specification we can look how price margins reacted over time to the introduction of the MTU. It seems as at the beginning of the beta phase of the MTU, price margins were still around 0 and then subsequently slightly lower than before. Larger decreases happened later on with the official launch of the MTU in December. This could be connected to consumers needing some time to learn about the availability of the MTU and potential greater press exposure after the official launch.

As a final check, we use the Difference-in-Difference approach with the EU weekly gasoline date, which also supports the previous results of a negative effect of the introduction of the MTU on price margins in Germany. In this specification the treatment effect is slightly smaller than before at around 1 cent per liter, but still highly significant. Furthermore it seems that price margins in general over all countries seem to have fallen in the period after the introduction of the MTU, but in Germany stronger than in other countries.

Overall, the MTU seems to have achieved its purpose set by the Federal Cartel Office to increase competition and thereby decreasing stations’ margins and consequently also consumer prices. Turning to the economic significance of the results we have to point out that the magnitude of the reduction remains small. For an average consumer the savings calculated over a month amount to to between 1.80 Euro and 3.60 Euro, which is not an economically significant amount.

## Conclusions

Over the different specifications we consistently find a negative effect of the MTU on price margins, accounting for a reduction for 1 to 2 cent per liter. In terms of the stations’ margins this a rather high effect of about 20 to 25% as the average price margin was at around 8.7 cents per liter during our observed price period.

Overall, we can confirm the result of Frondel et al. (2018) that the introduction of the MTU induced welfare gains for consumers by reducing market power of gasoline stations. That said, we have to point out that the reduction in price margins and prices of gasoline stations were rather small and therefore probably for the average consumer of low economic significance.

## References

FCO (2011). Fuel Sector Inquiry - Final Report. Bonn, May 2011. Available at: <http://www.bundeskartellamt.de/SharedDocs/Publikation/EN/Sector%20Inquiries/Fuel%20Sector%20Inquiry%20-%20Final%20Report.html?nn=4143316>

Frondel, M., Horvath, M., Vance, C., and Kihm, A. (2018). Increased Market Transparency in Germany’s Gasoline Market: The Death of Rockets and Feathers? SFB Discussion Paper Nr. 31/2018.

Kihm, A., Ritter, N., and Vance, C. (2016). Is the German Retail Gasoline Market competitive? A spatial-temporal Analysis using Quantile Regression. Land Economics, 92(4):718–736.

Schultz, C. (2005). Transparency on the consumer side and tacit collusion. European Economic Review, 49(2):279–297.