

DiD TWFE-Q

Hans Martinez

30 Aug, 2021

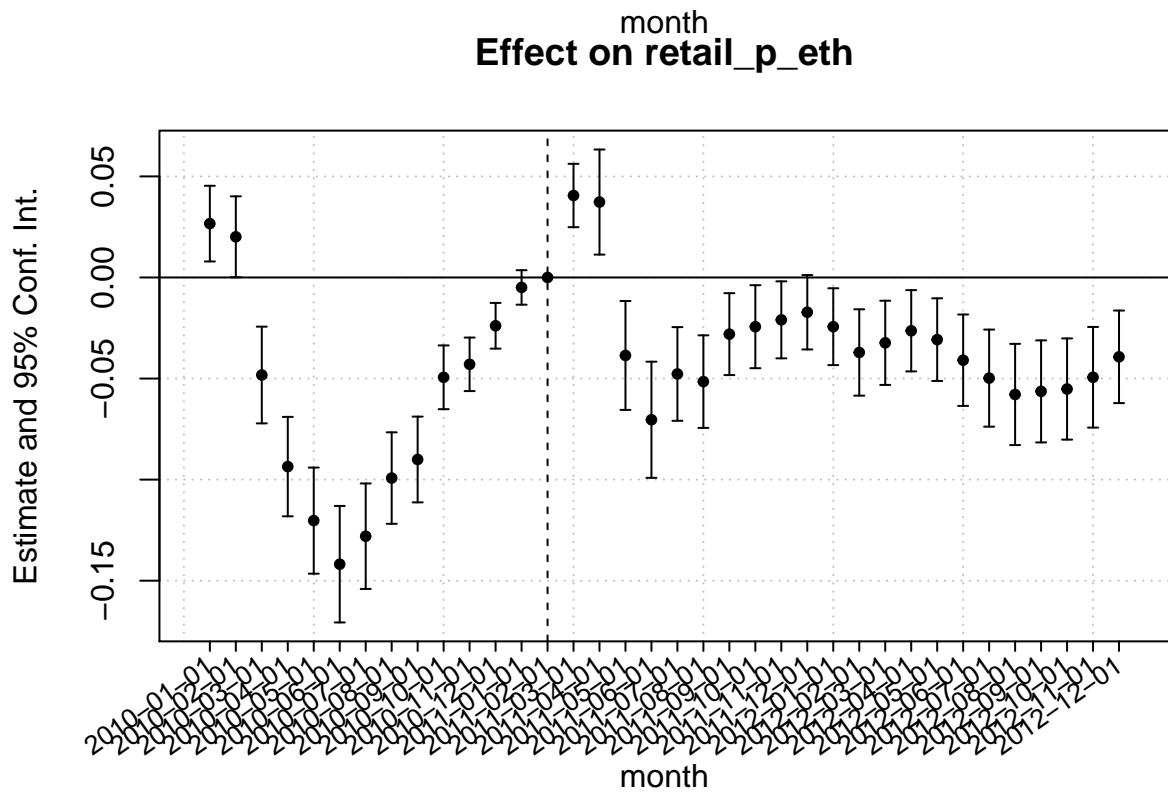
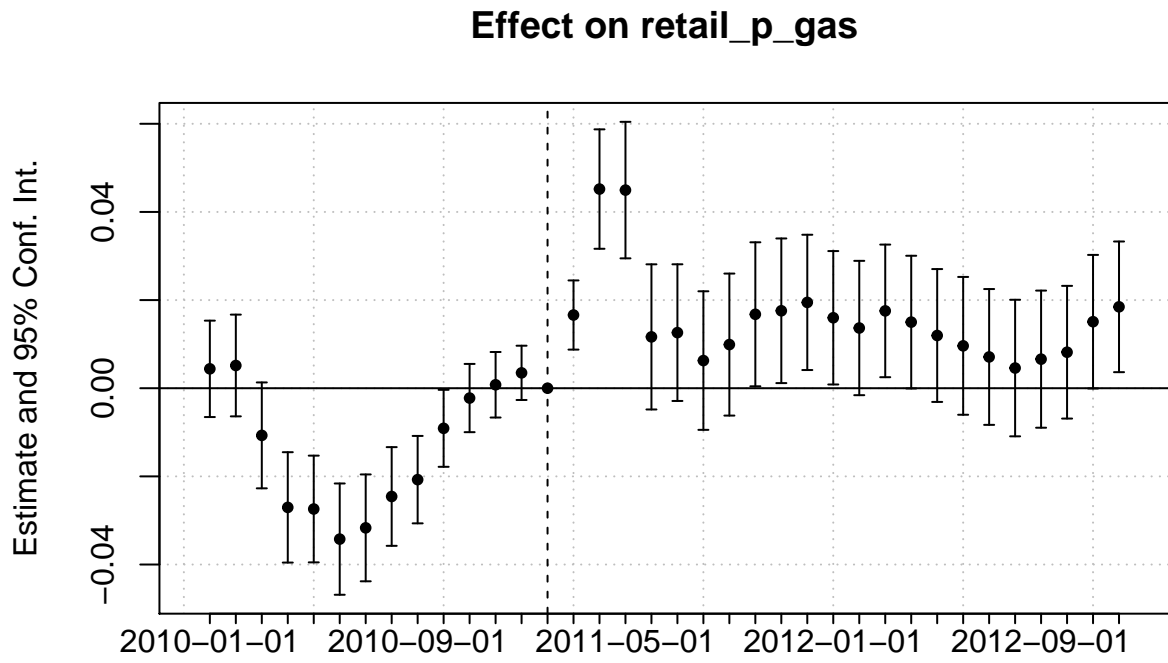
Diff-in-Diff two way fixed effects (TWFE)

$$Y_{it} = \beta'_t(Treatment_{it} * \mathbf{Month}_t) + \alpha X_{it} + \gamma_i^{Mun} + \gamma_t^{Qt} + \varepsilon_{it} \quad (1)$$

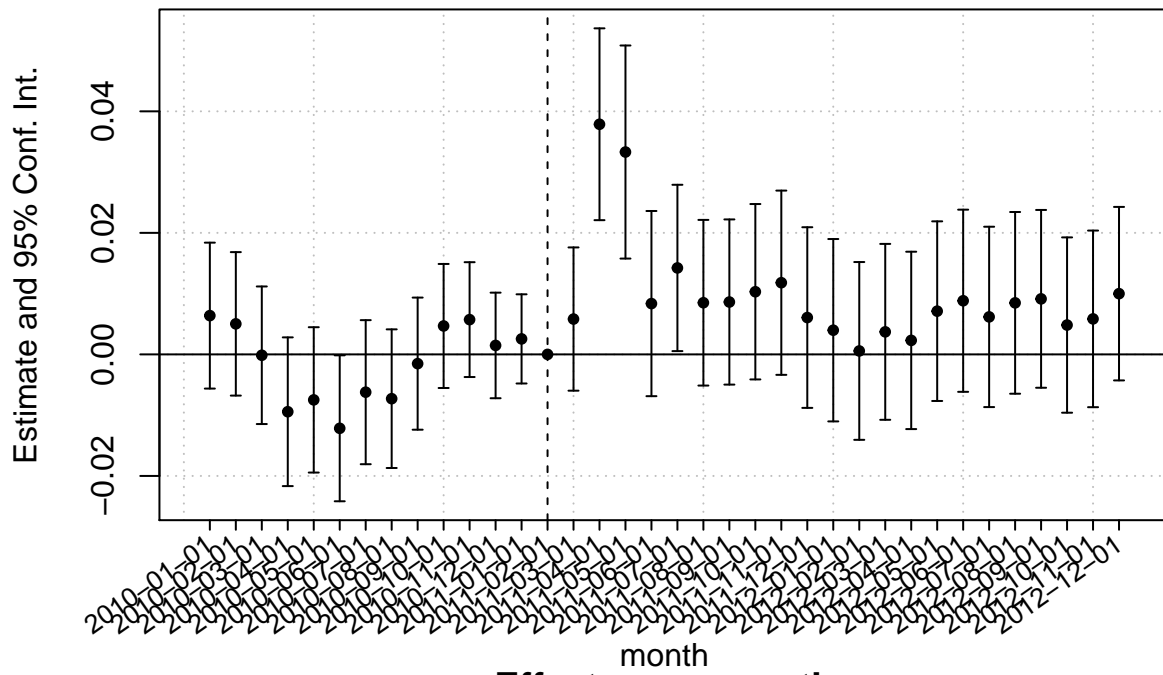
where i stands for municipality and t for month. Y_{it} is one of the outcome variables of interest. $Treatment_{it}$ is a dummy variable equal to one if the municipality is in the treatment group and zero if it is in the control group. $Month_t$ is a vector of the month-year period dummy variables (96 month-year periods). γ_i^{Mun} and γ_t^{Qt} are municipality and month-year fixed effects, respectively. Finally, X_{it} is a vector of control variables.

The graphs below show only the interaction between the *Month* and the *Treatment* variables.

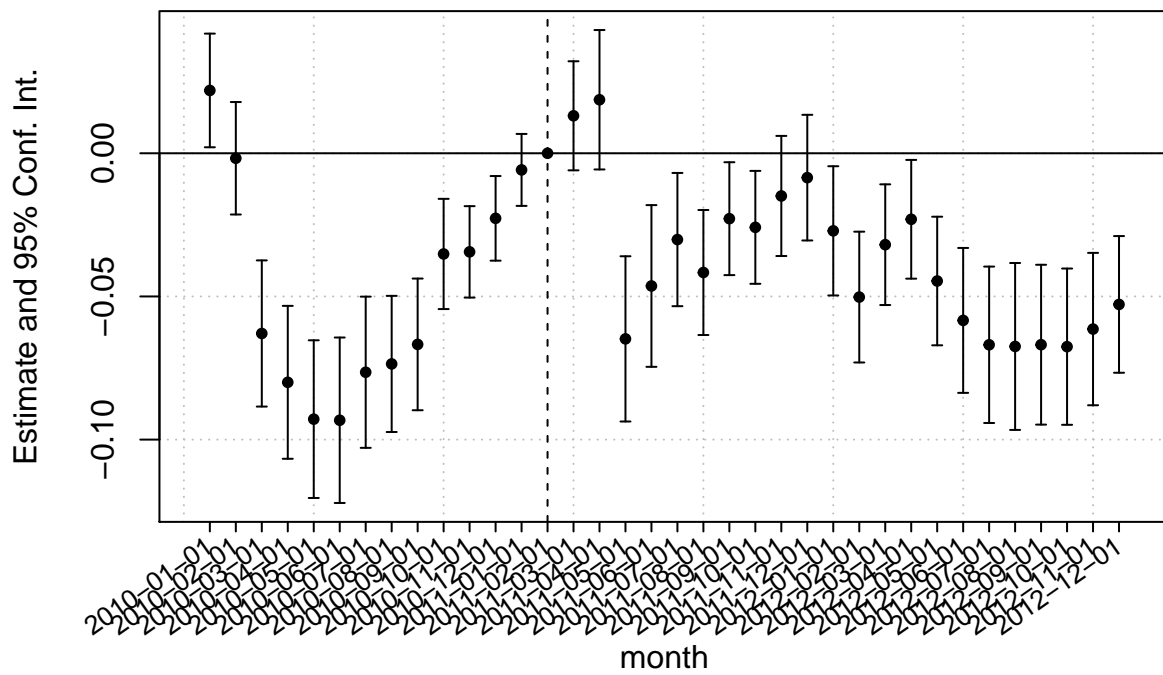
Both as treatment, Just One and None as control



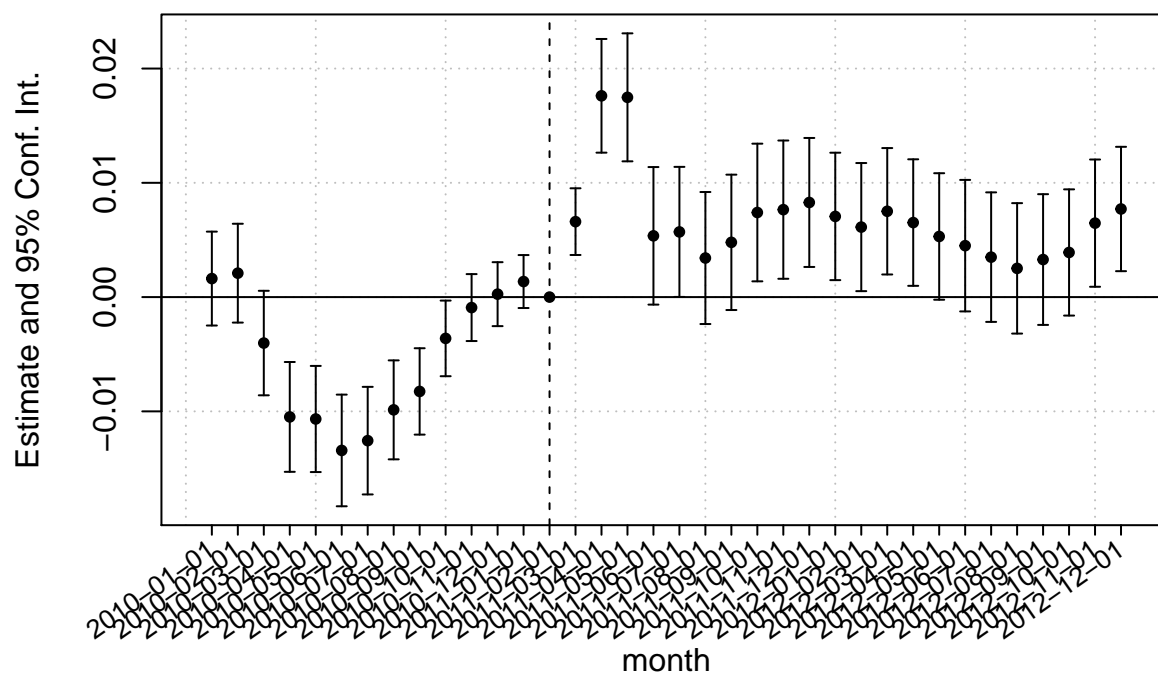
Effect on ws_p_gas



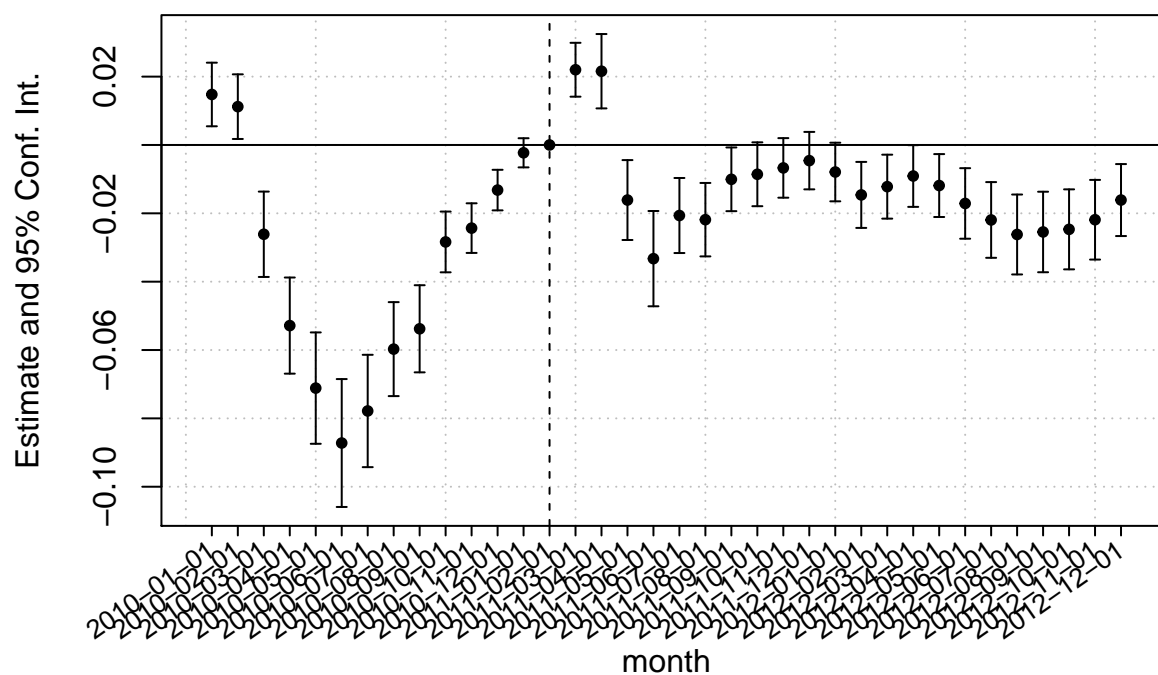
Effect on ws_p_eth

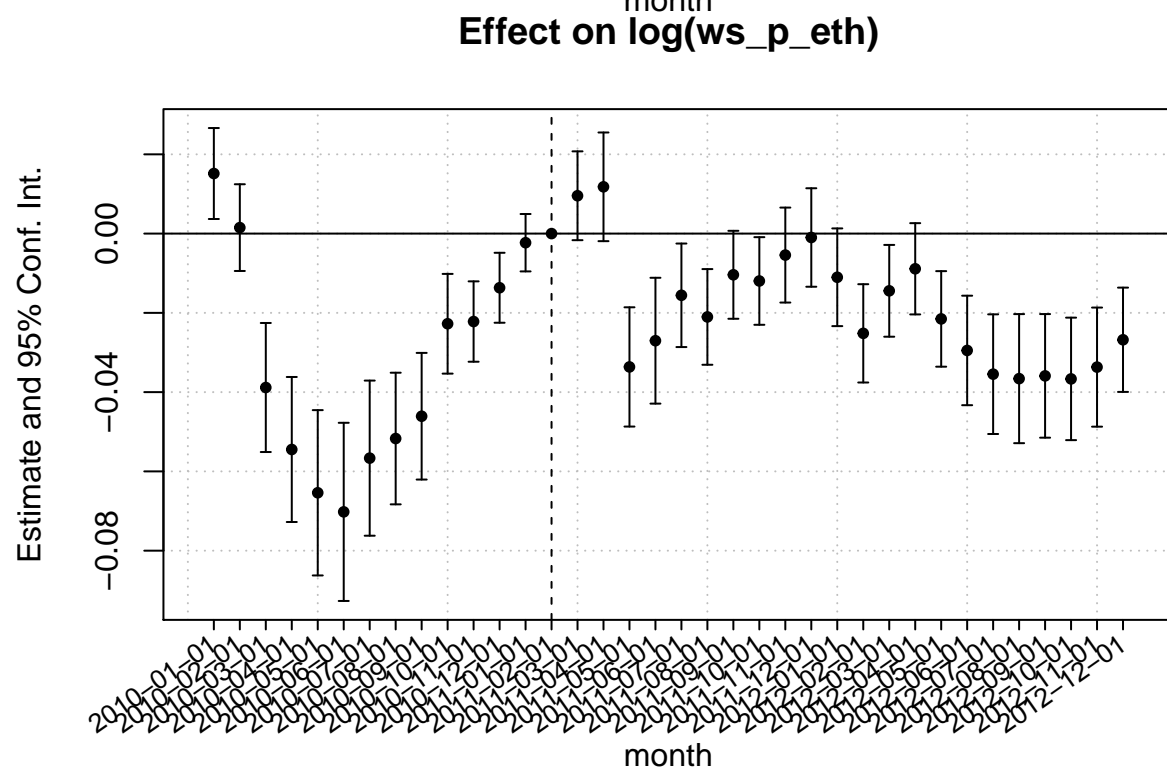
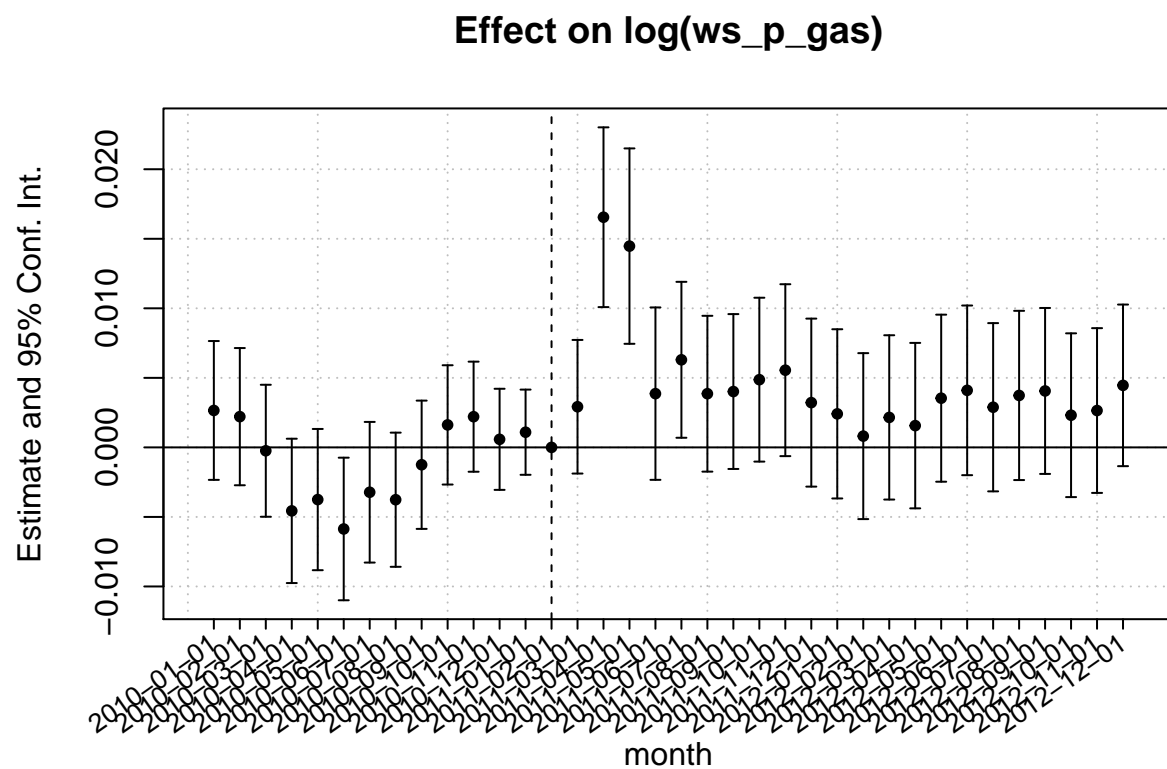


Effect on log(retail_p_gas)

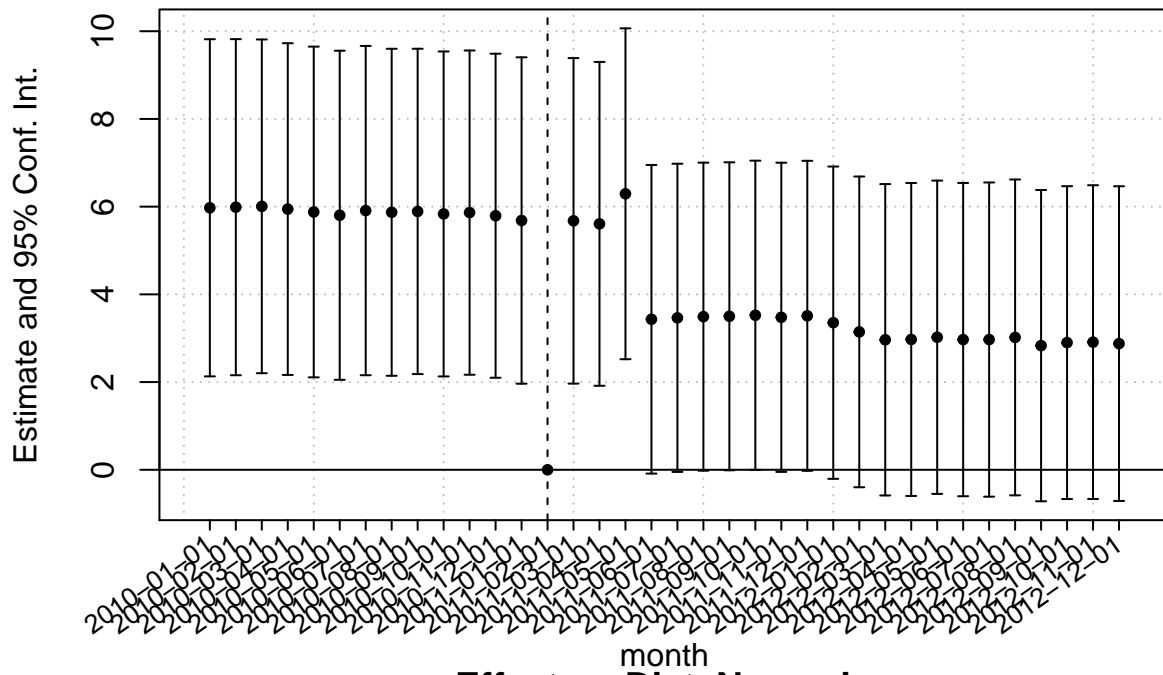


Effect on log(retail_p_eth)

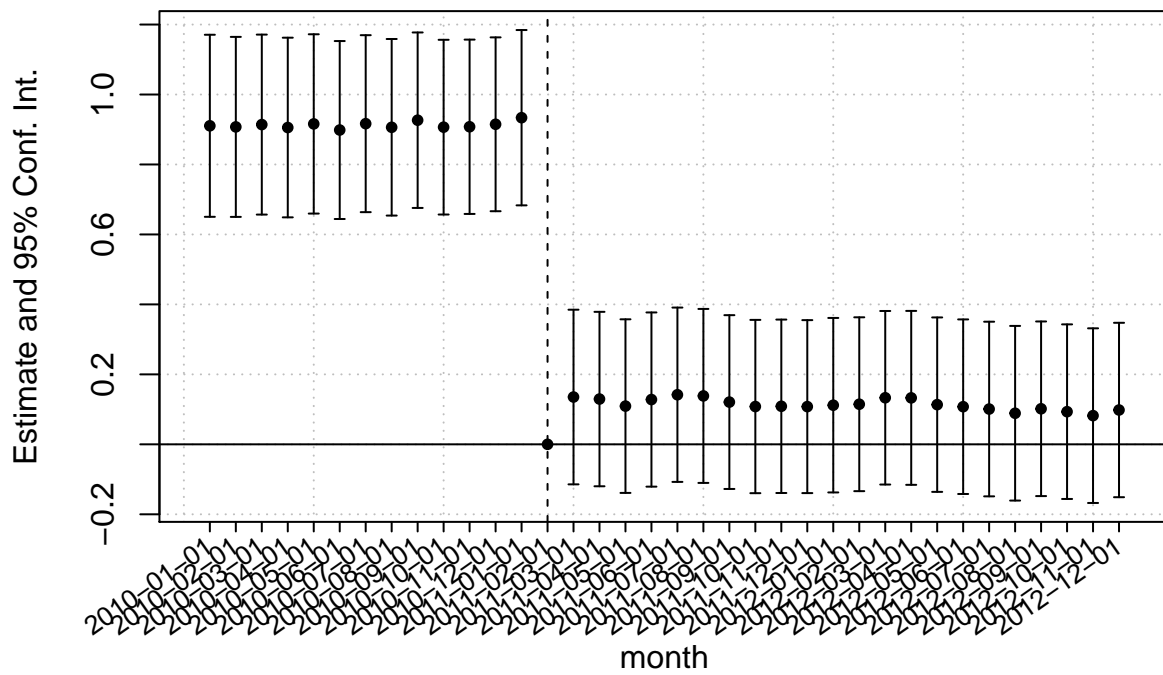




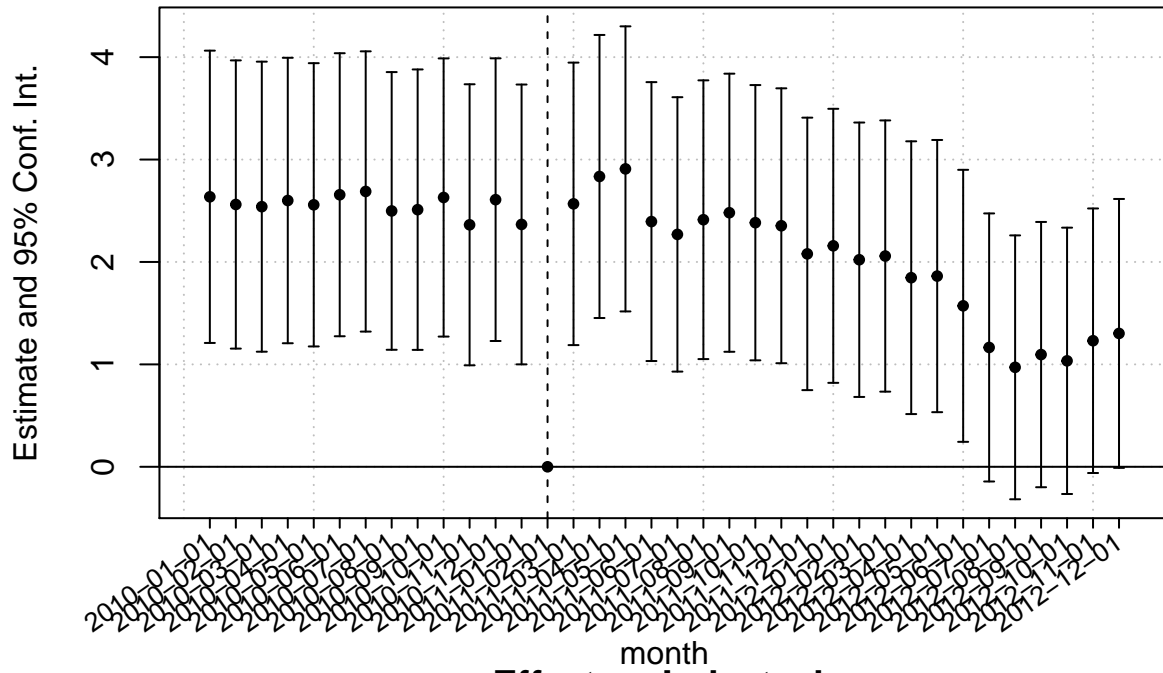
Effect on No_st_total



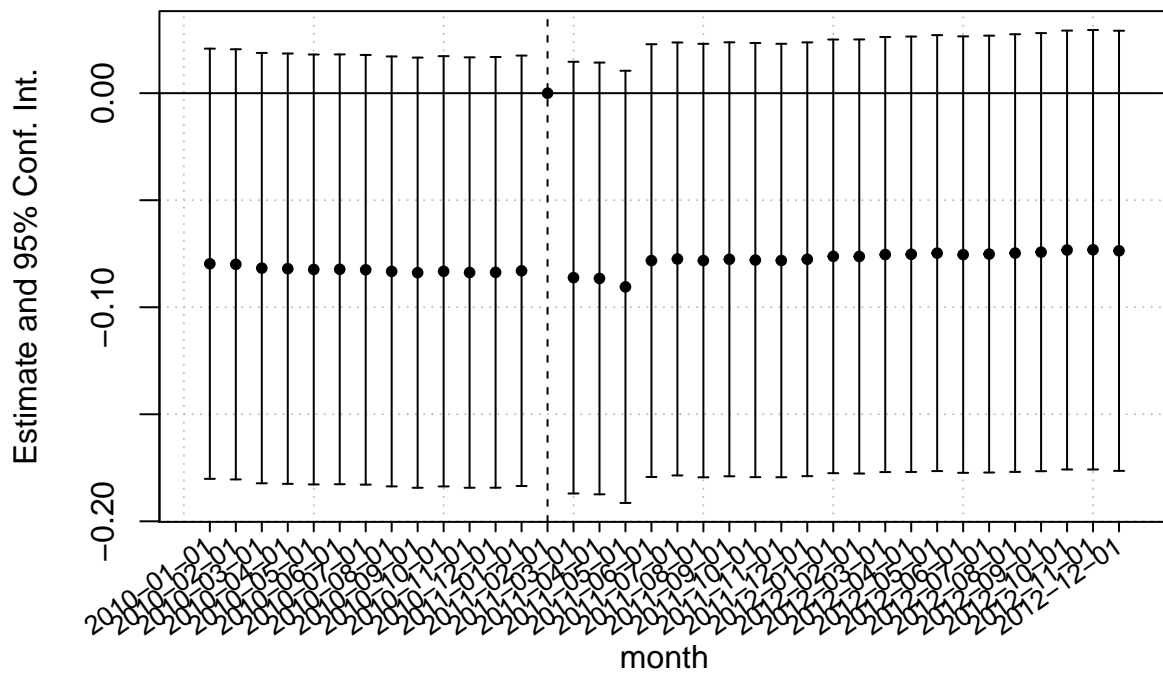
Effect on Dist_No_main

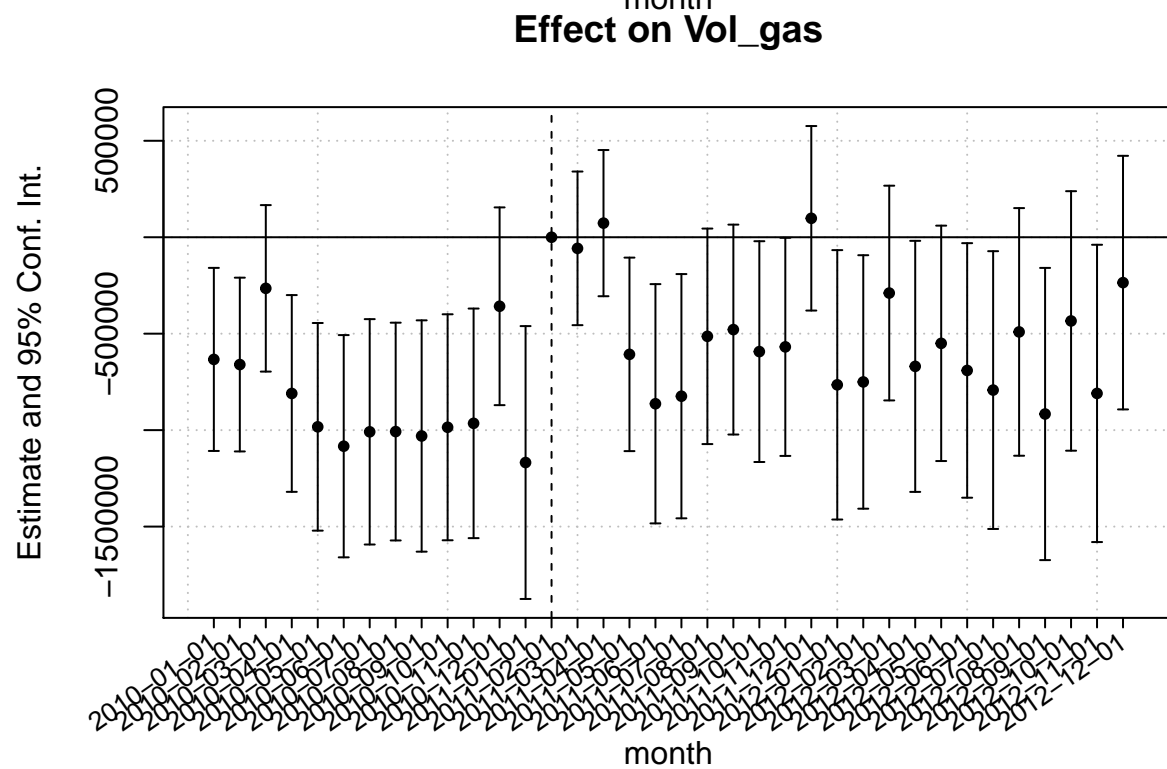
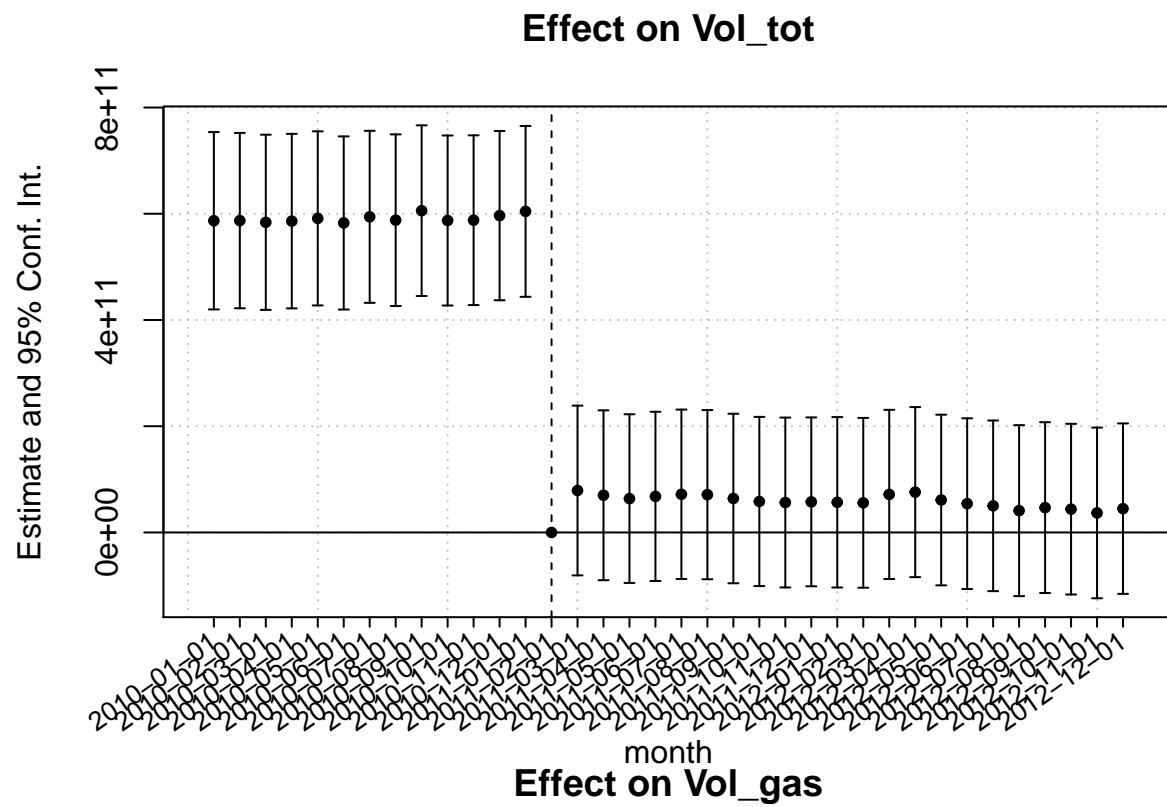


Effect on Dist_No_other

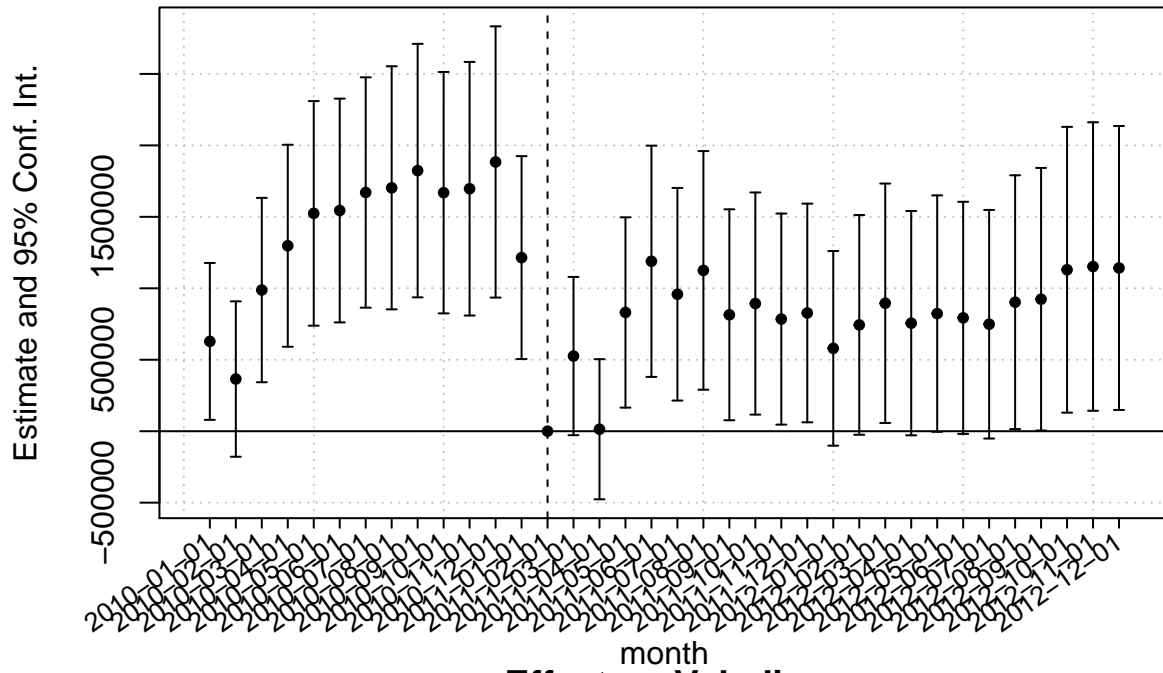


Effect on Ind_st_sh

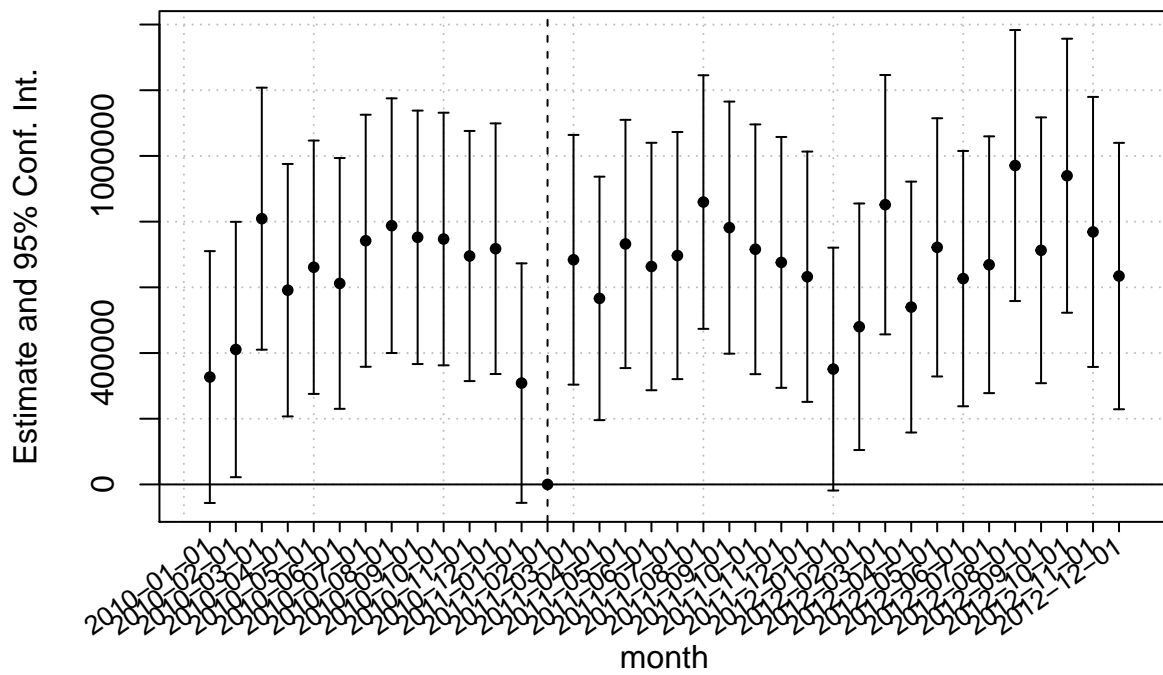


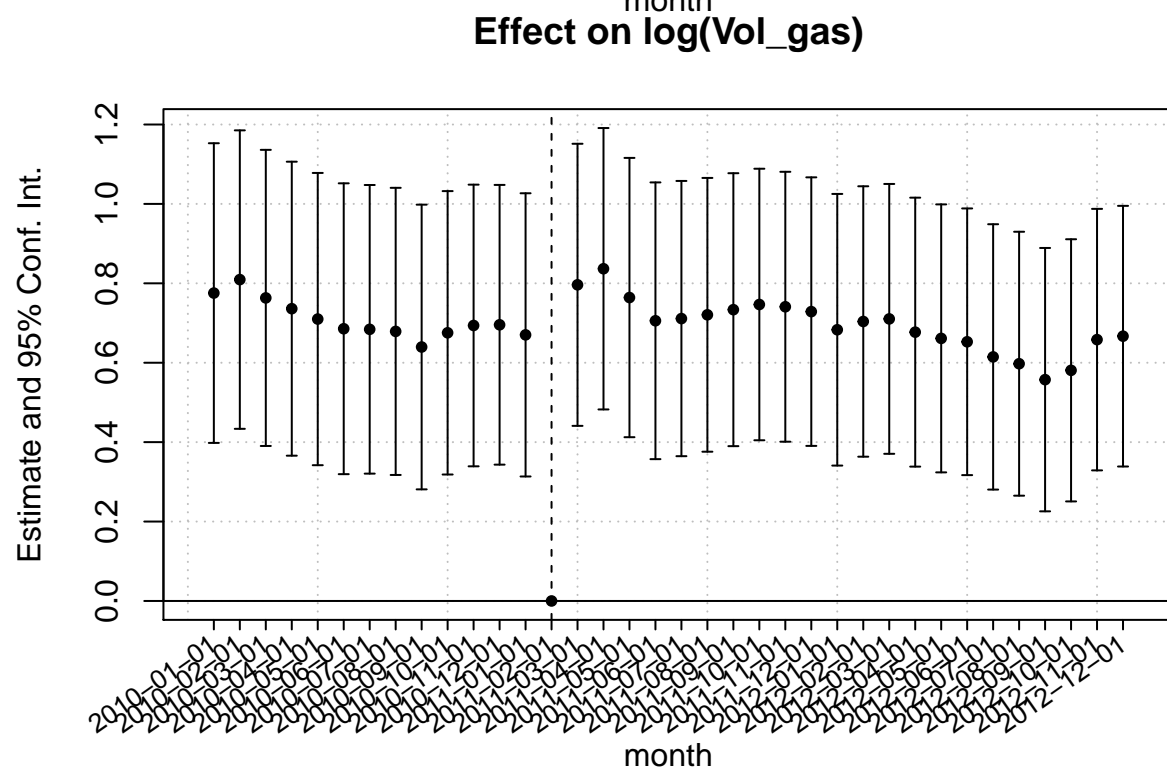
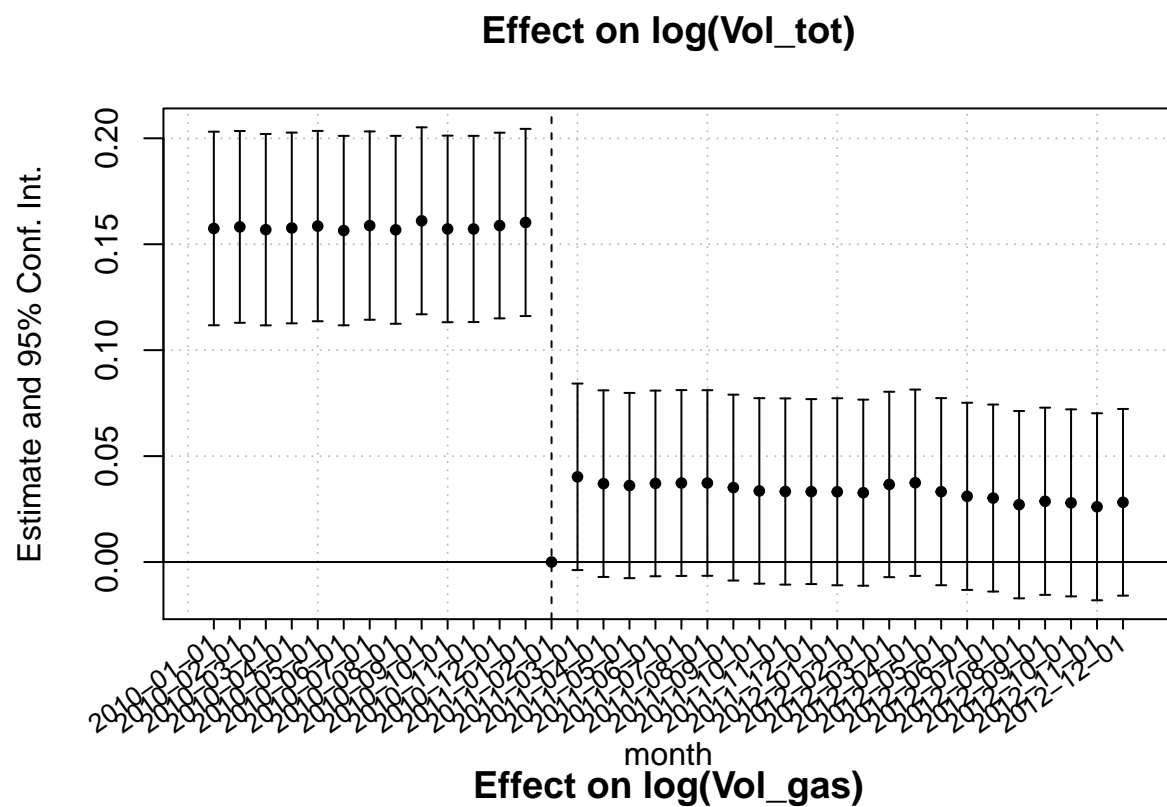


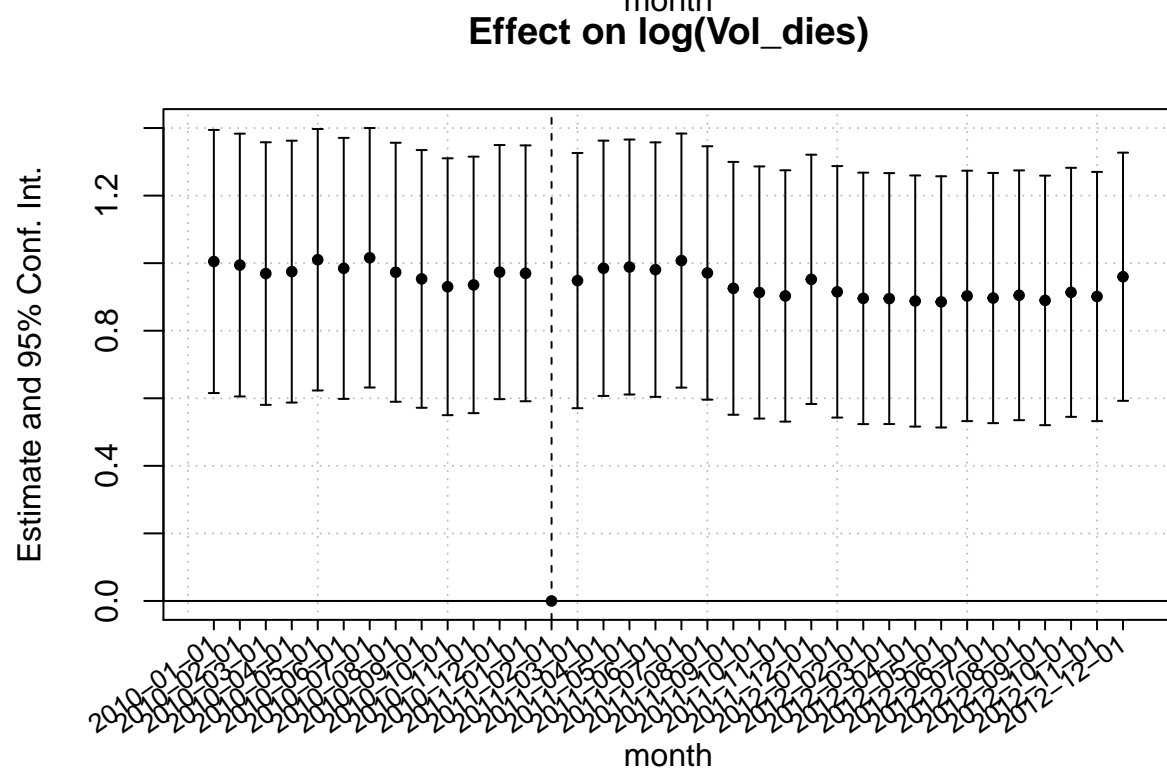
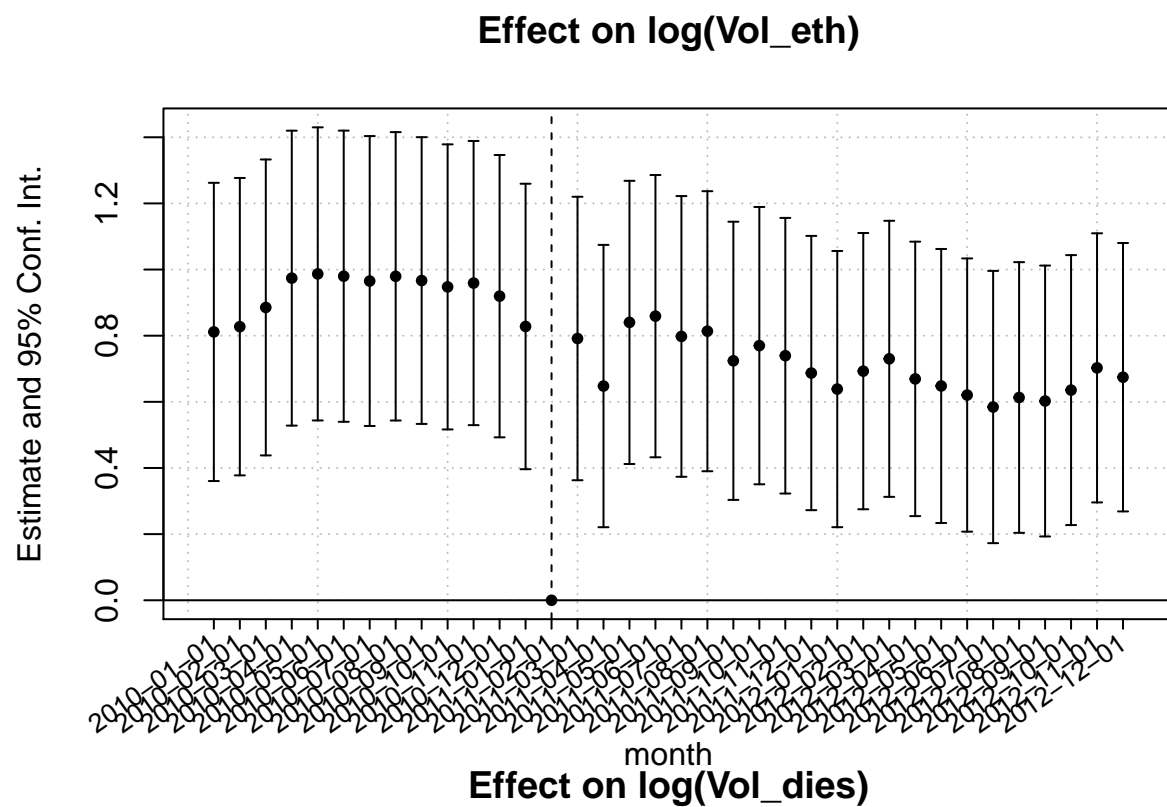
Effect on Vol_eth



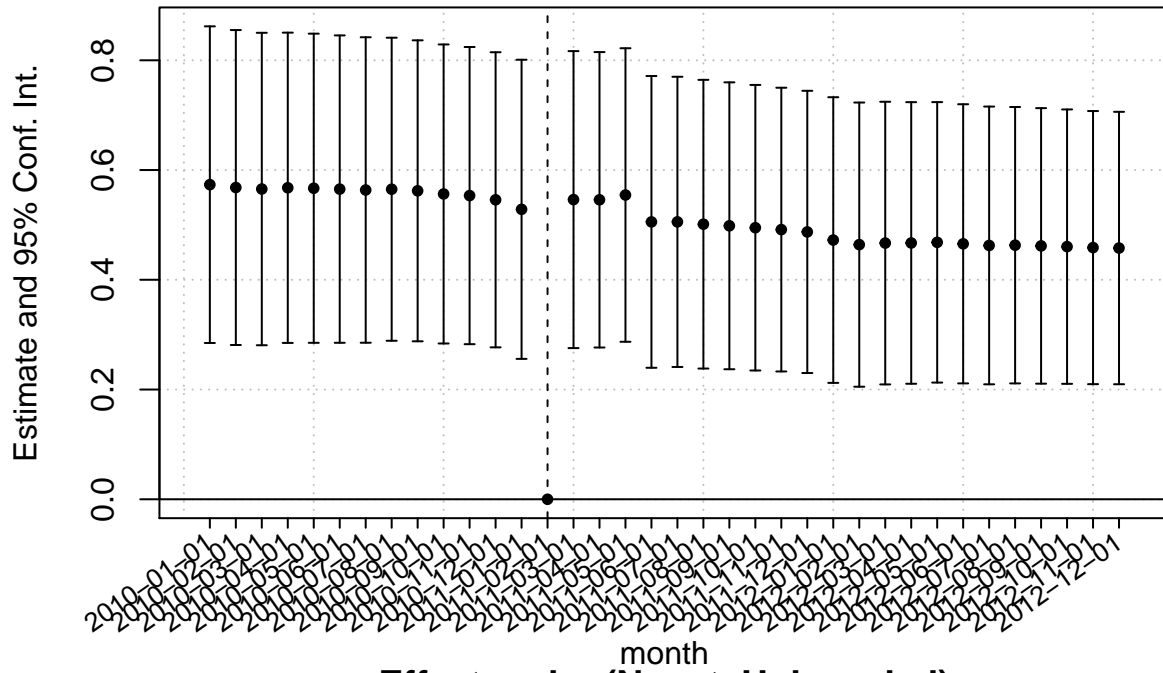
Effect on Vol_dies



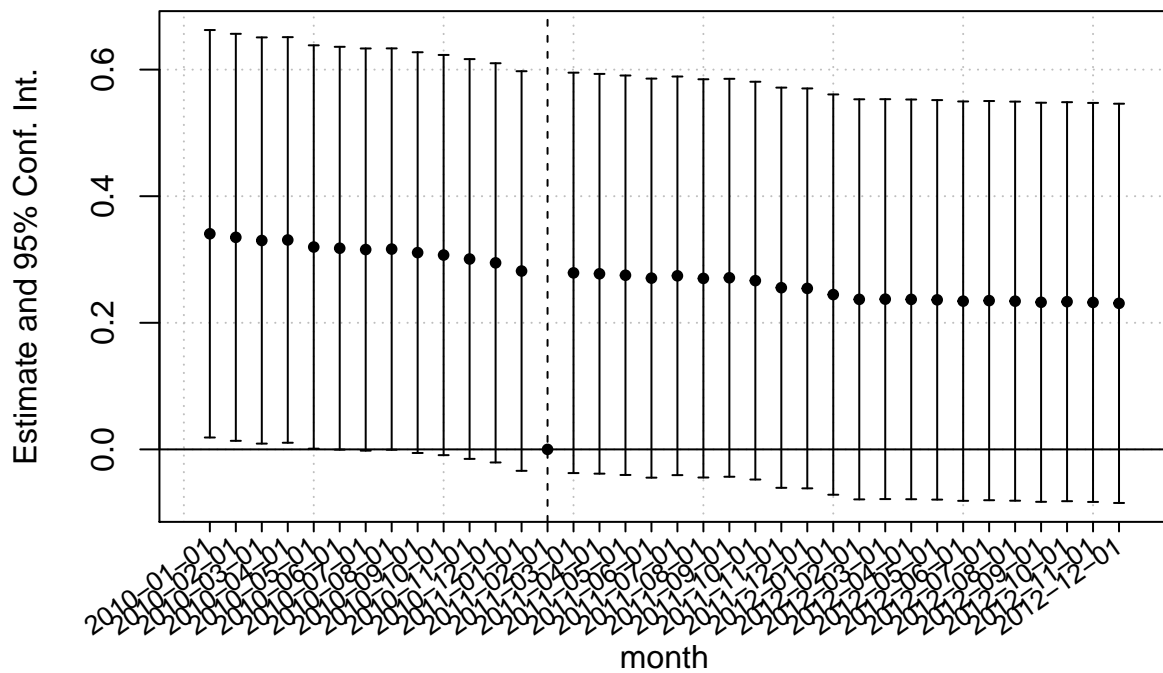




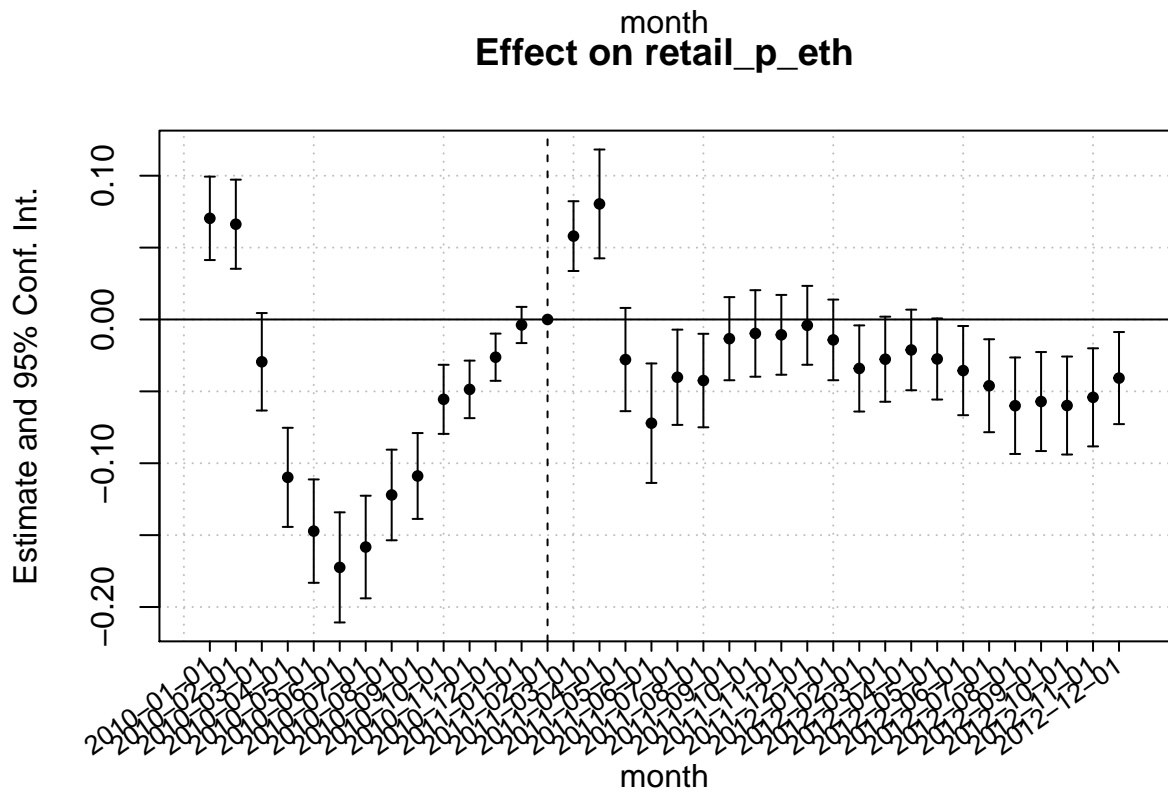
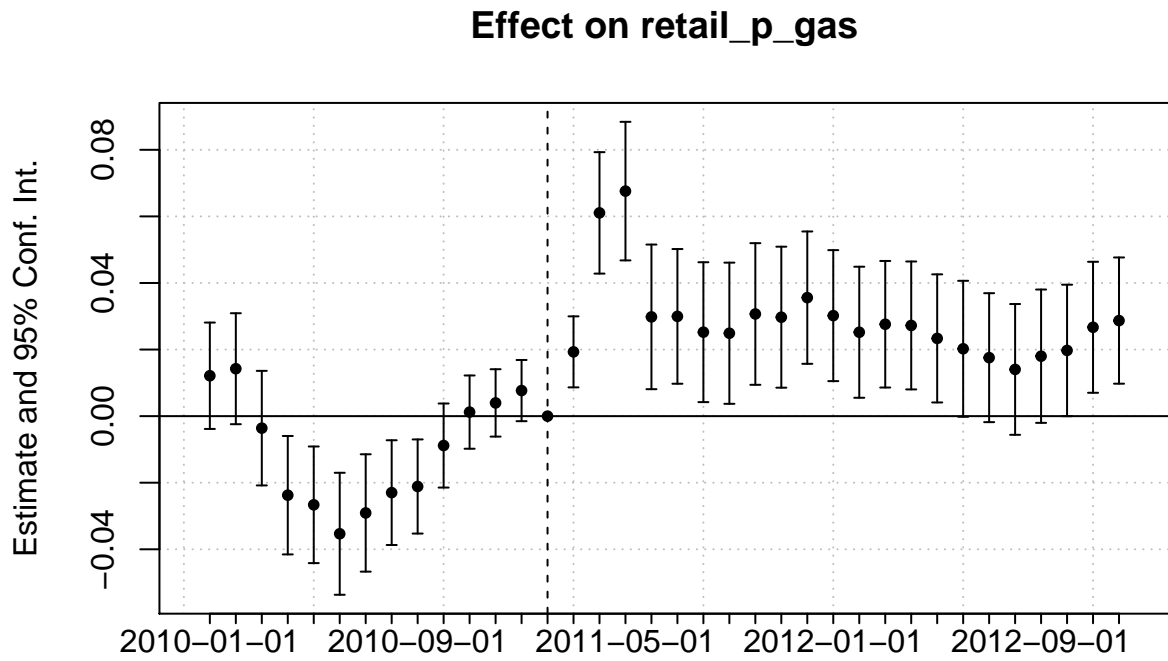
Effect on log(No_st_total)



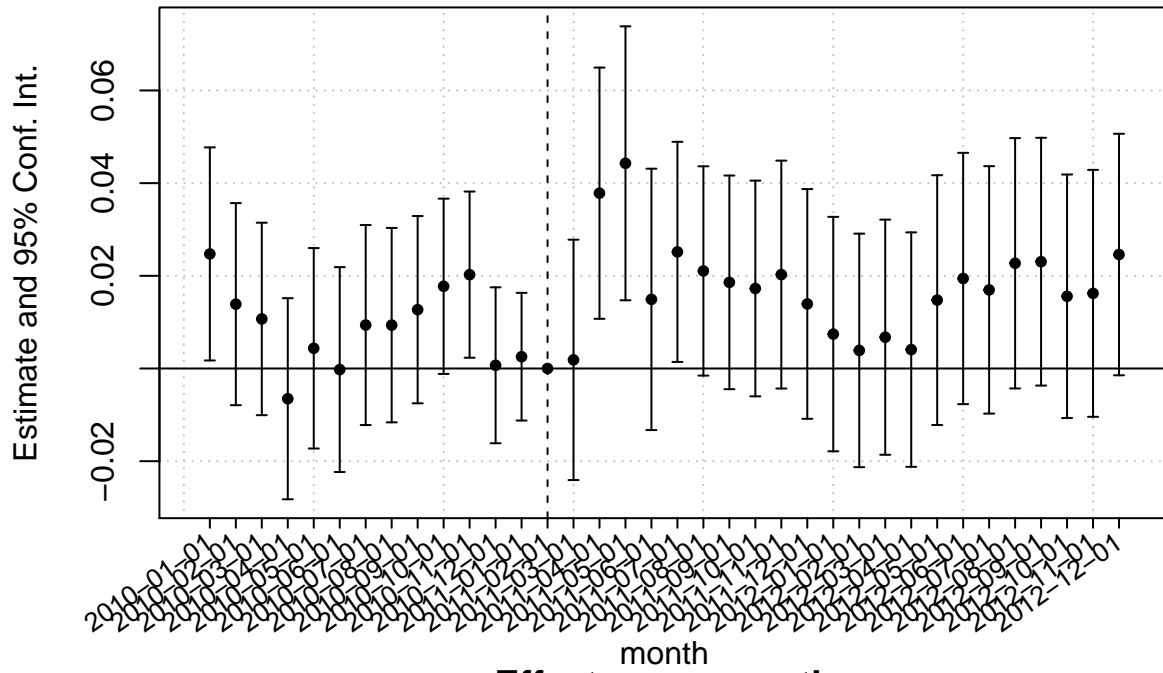
Effect on log(No_st_Unbranded)



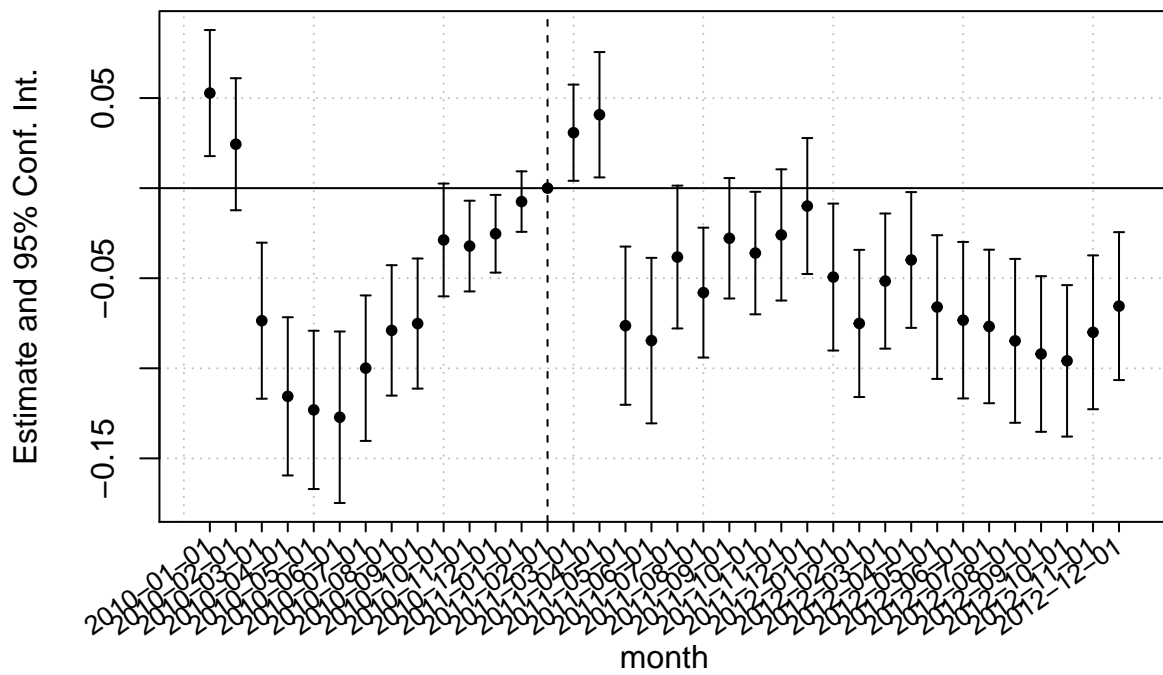
Both as treatment, None as control



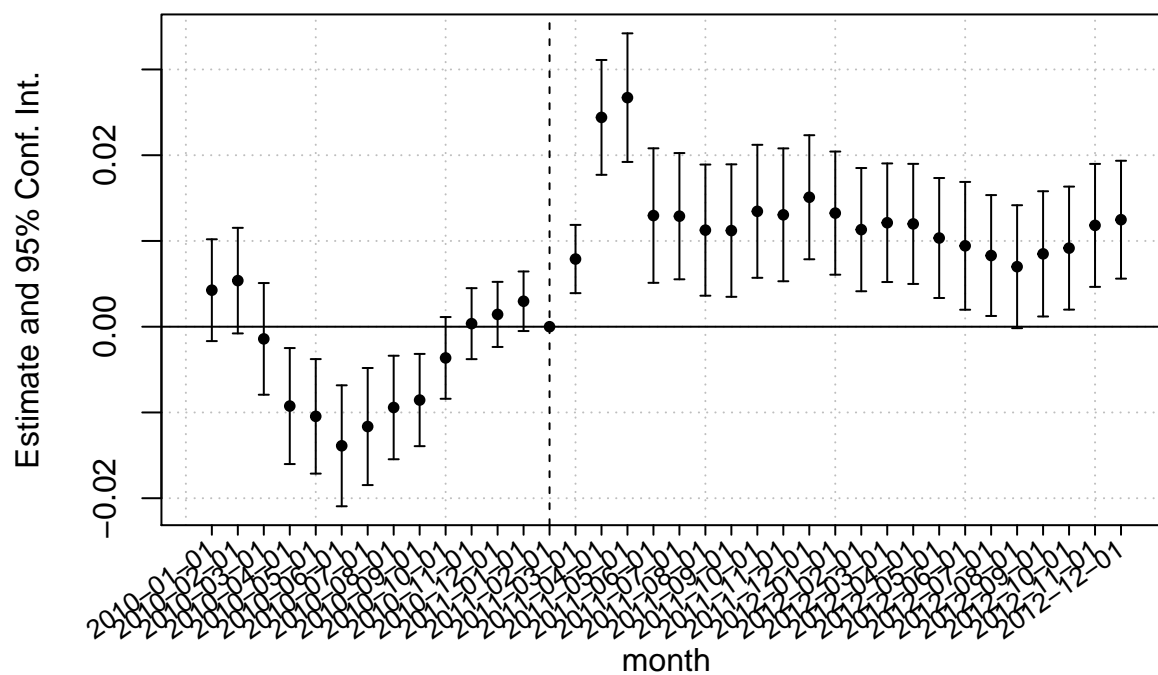
Effect on ws_p_gas



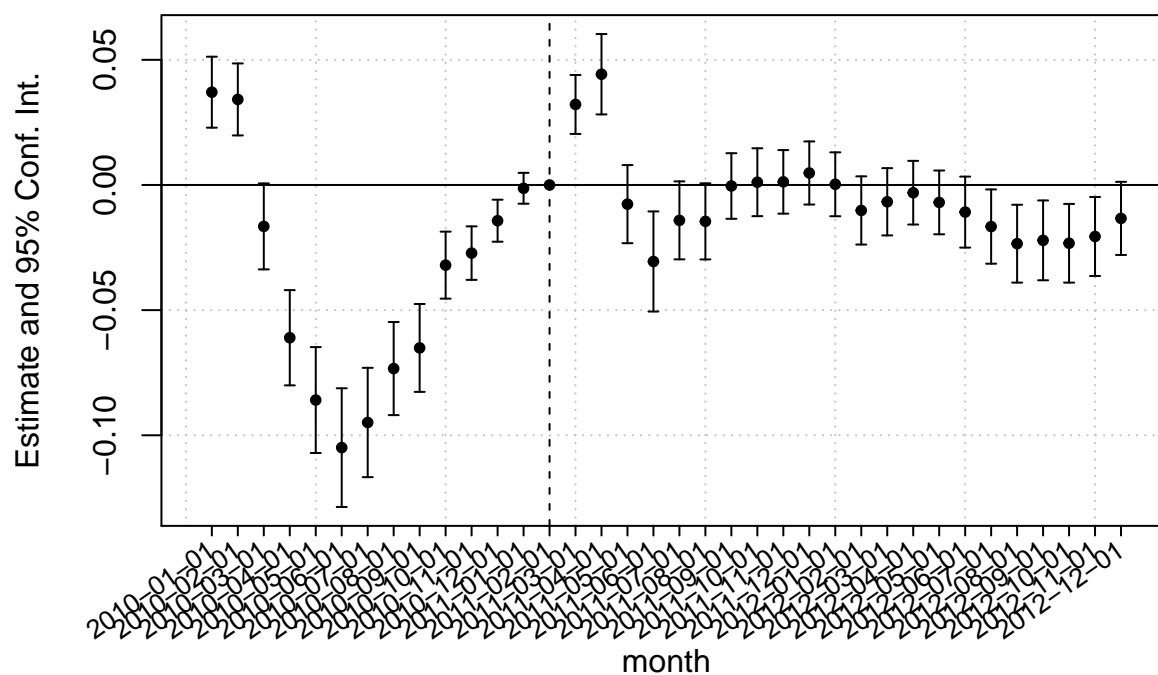
Effect on ws_p_eth



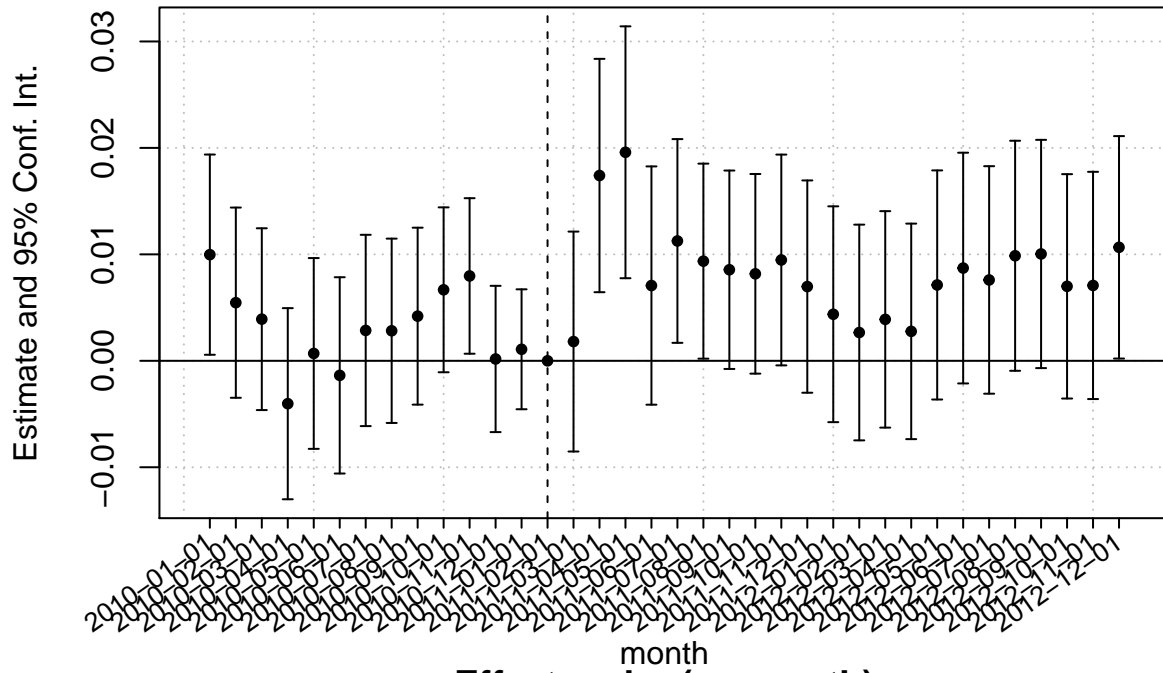
Effect on log(retail_p_gas)



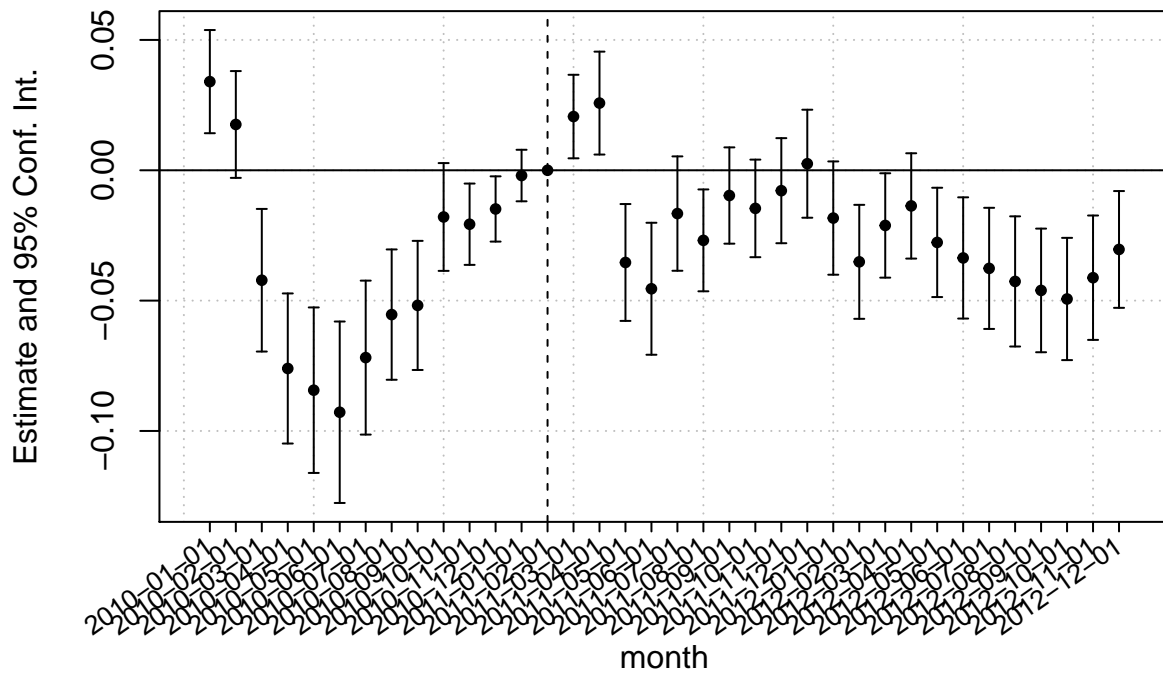
Effect on log(retail_p_eth)

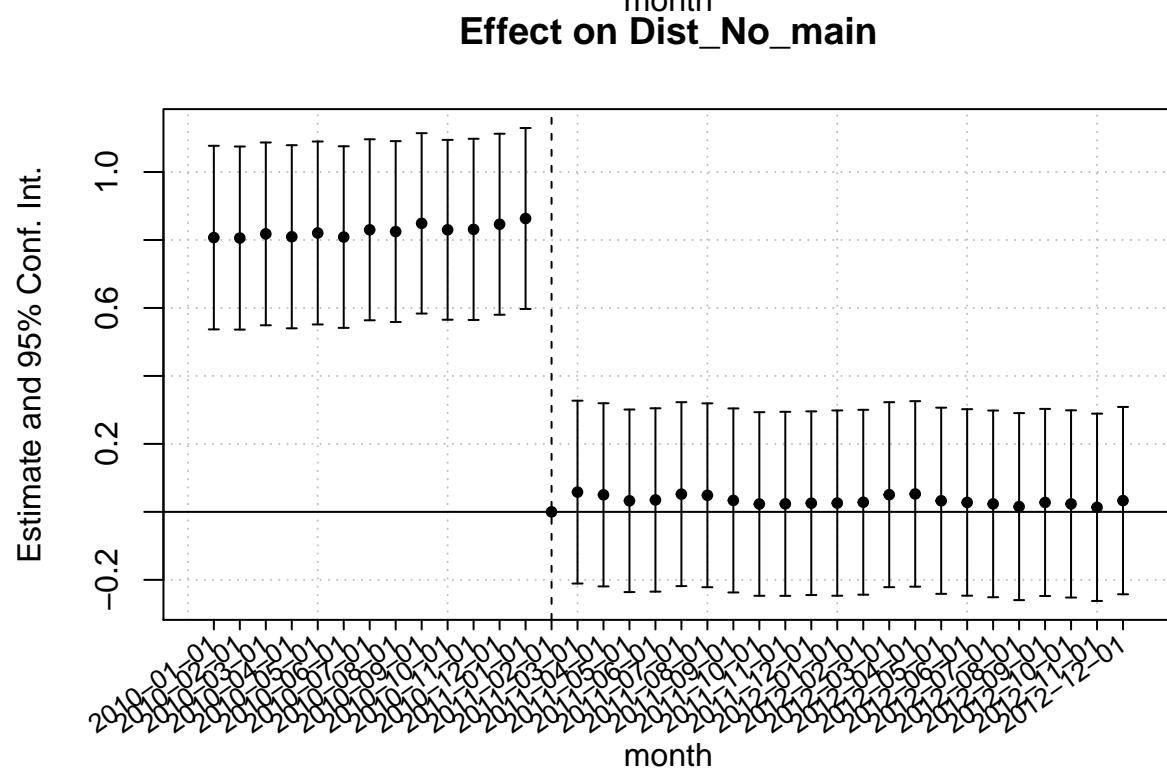
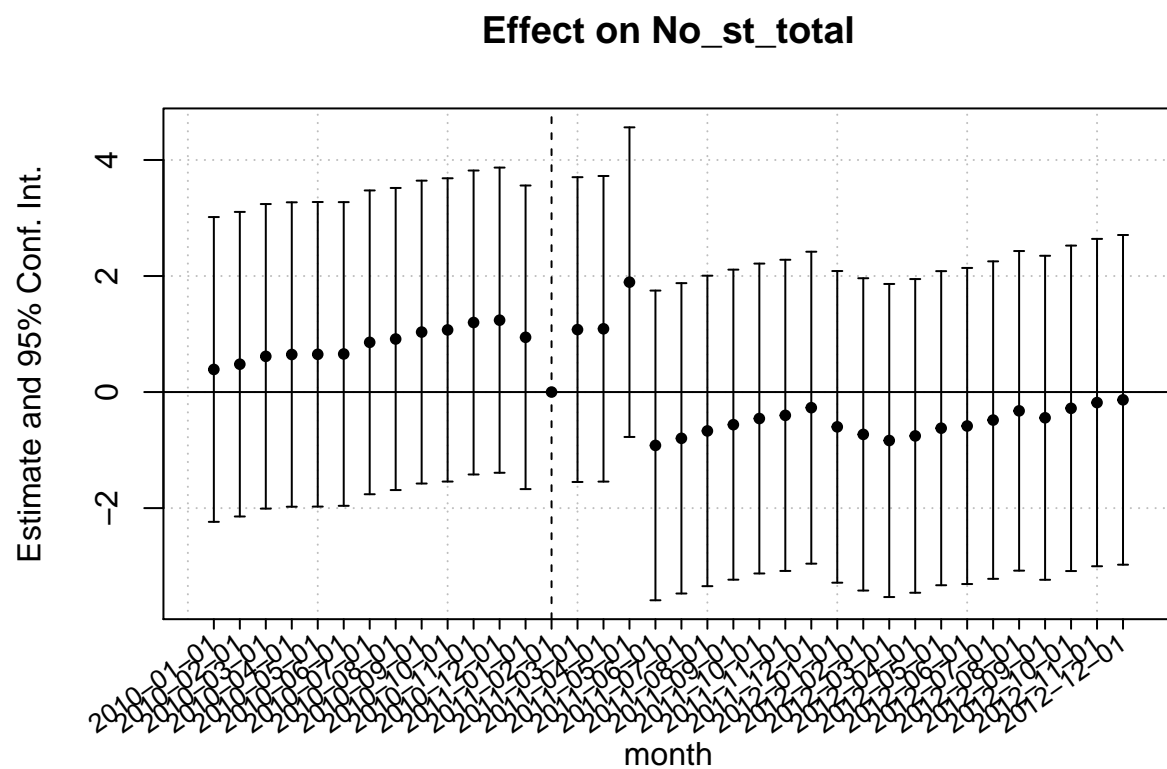


Effect on log(ws_p_gas)

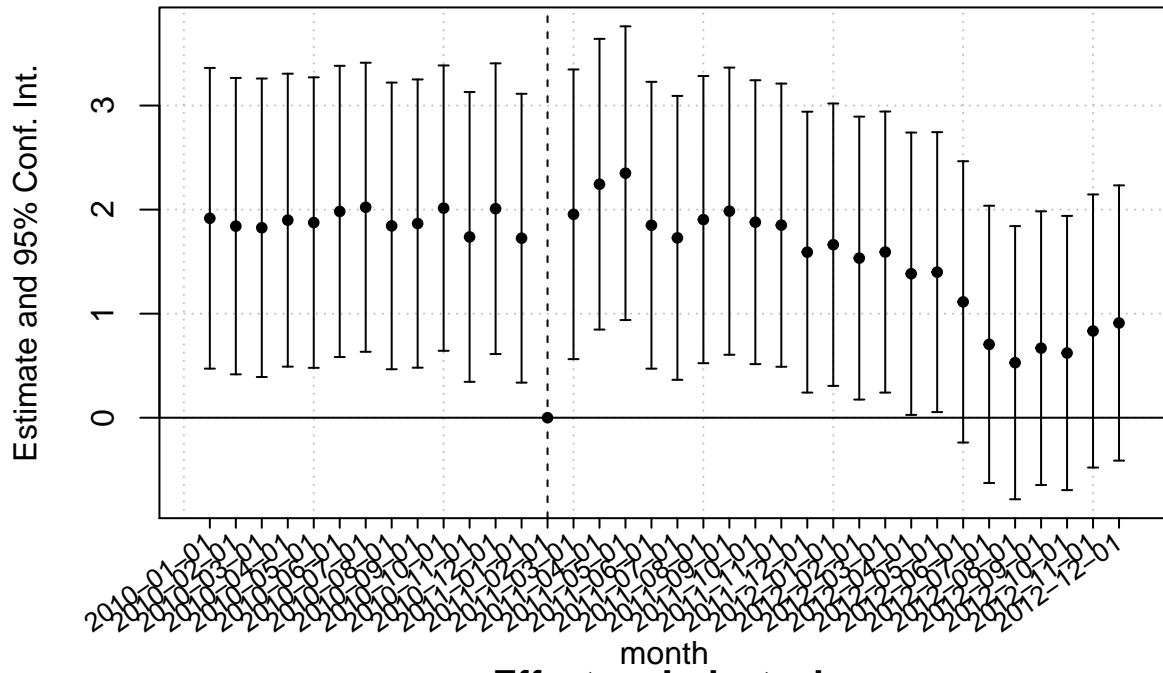


Effect on log(ws_p_eth)

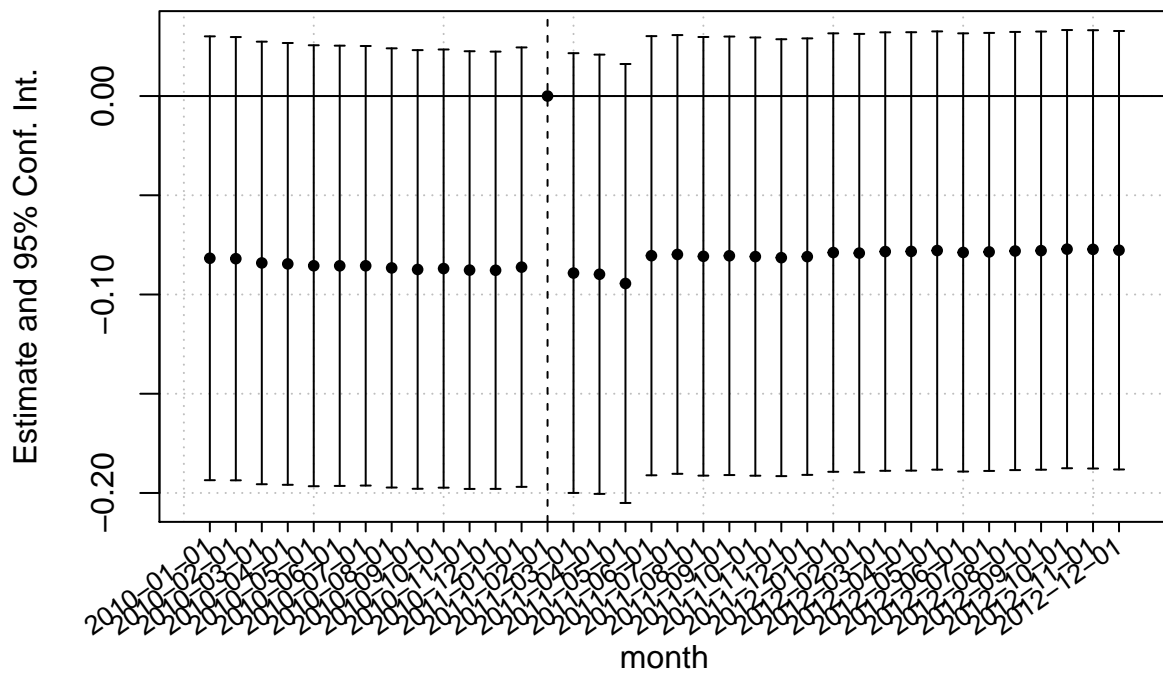




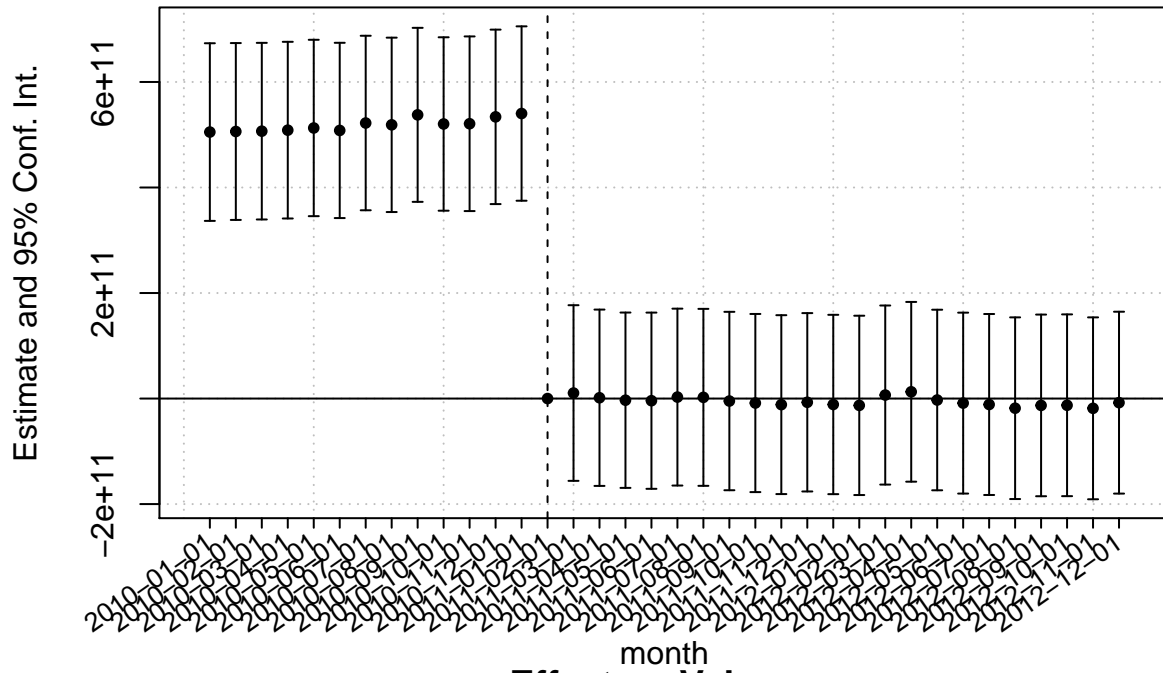
Effect on Dist_No_other



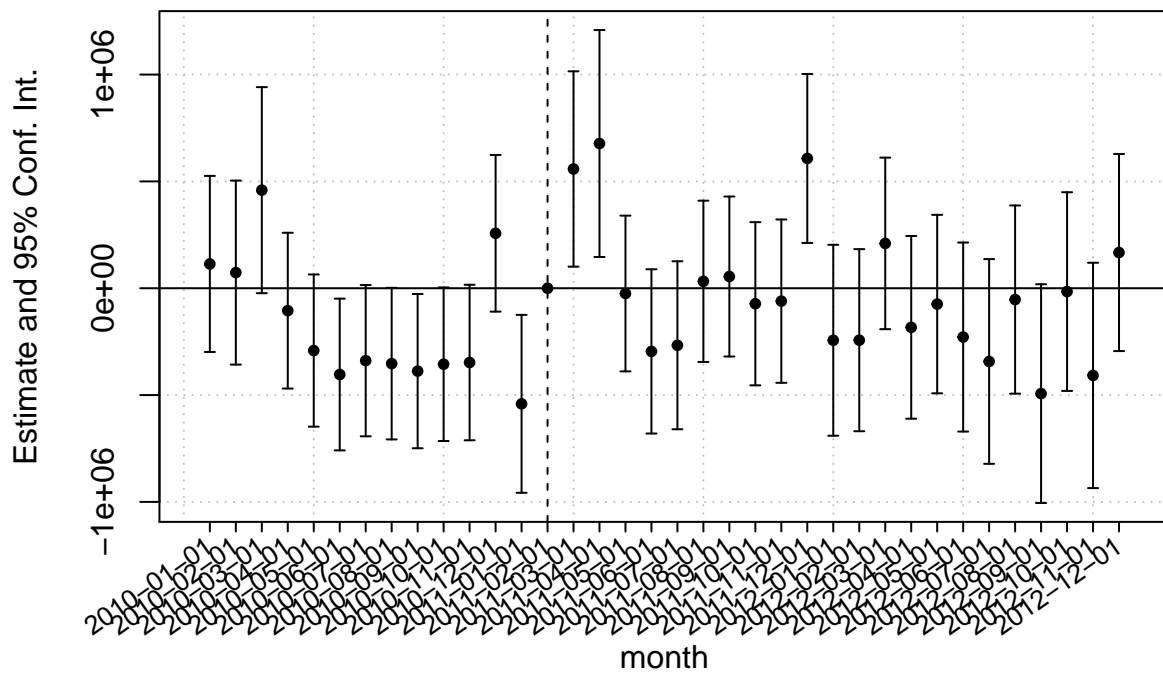
Effect on Ind_st_sh



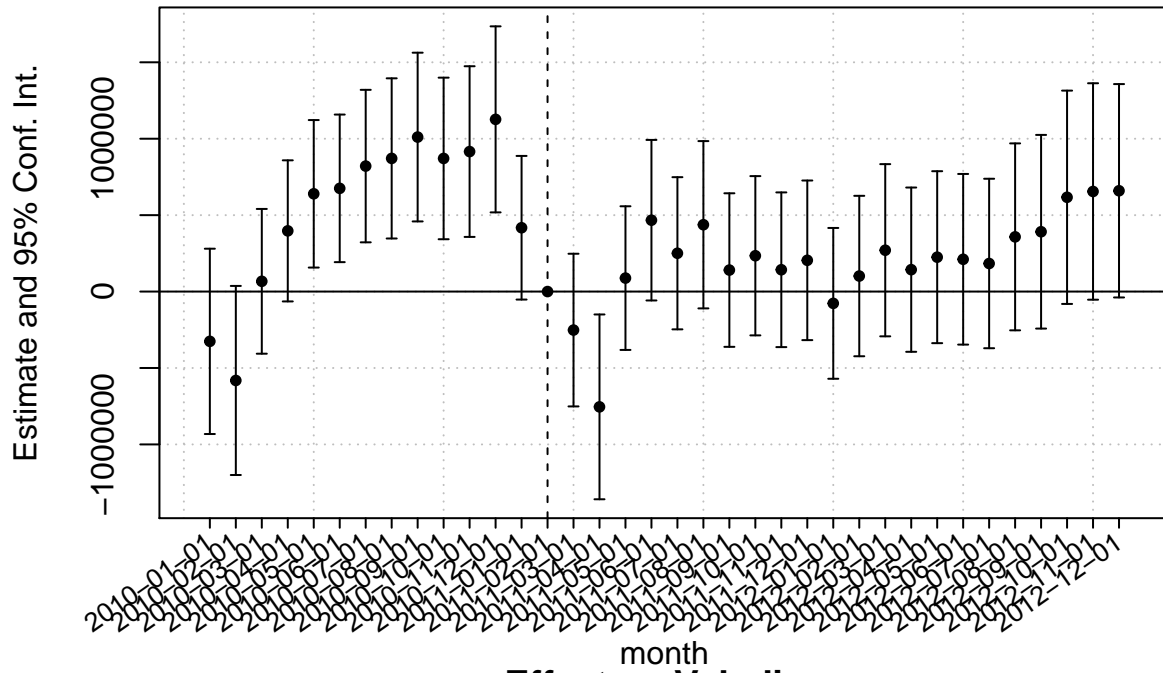
Effect on Vol_tot



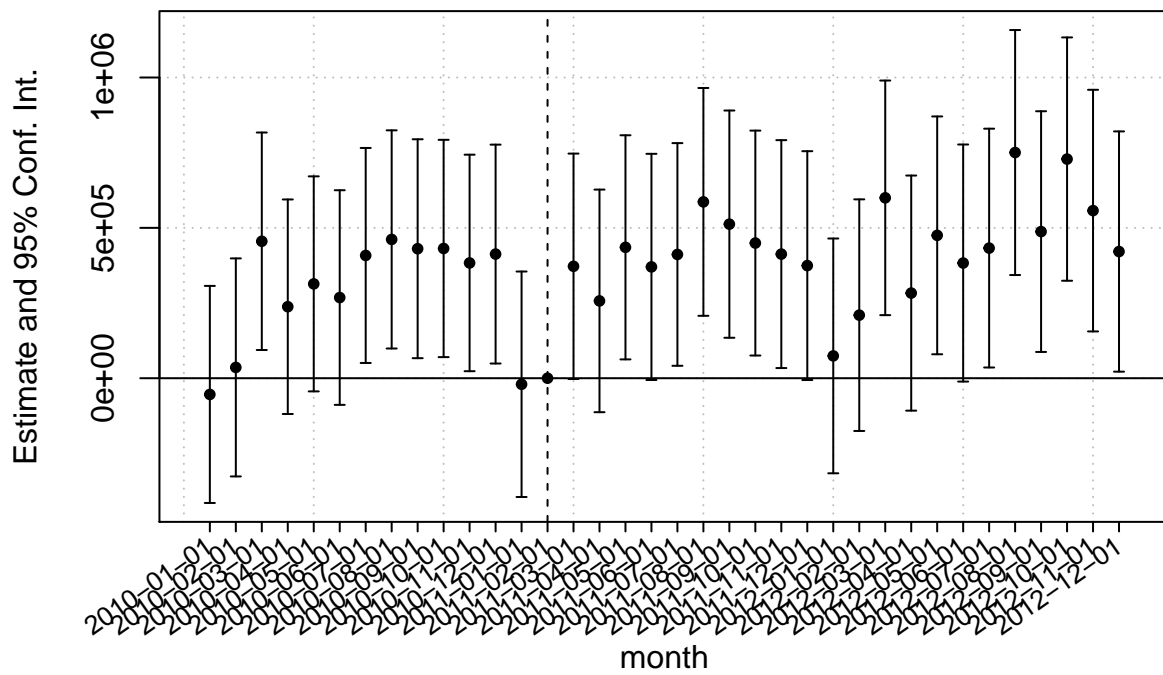
Effect on Vol_gas



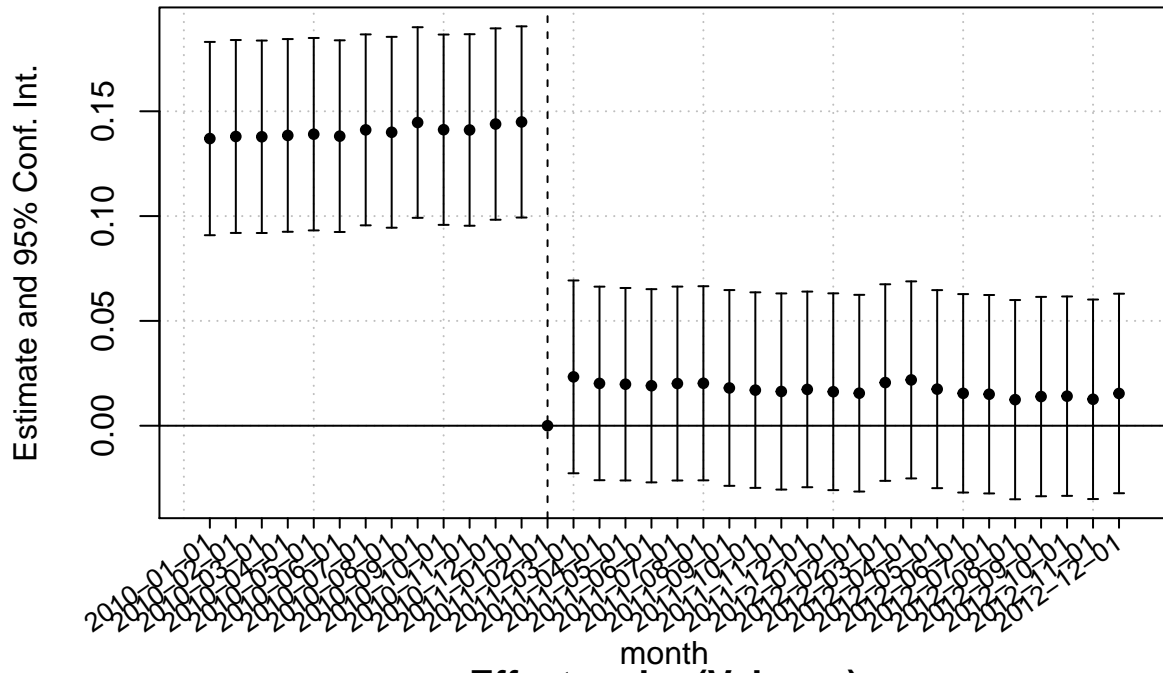
Effect on Vol_eth



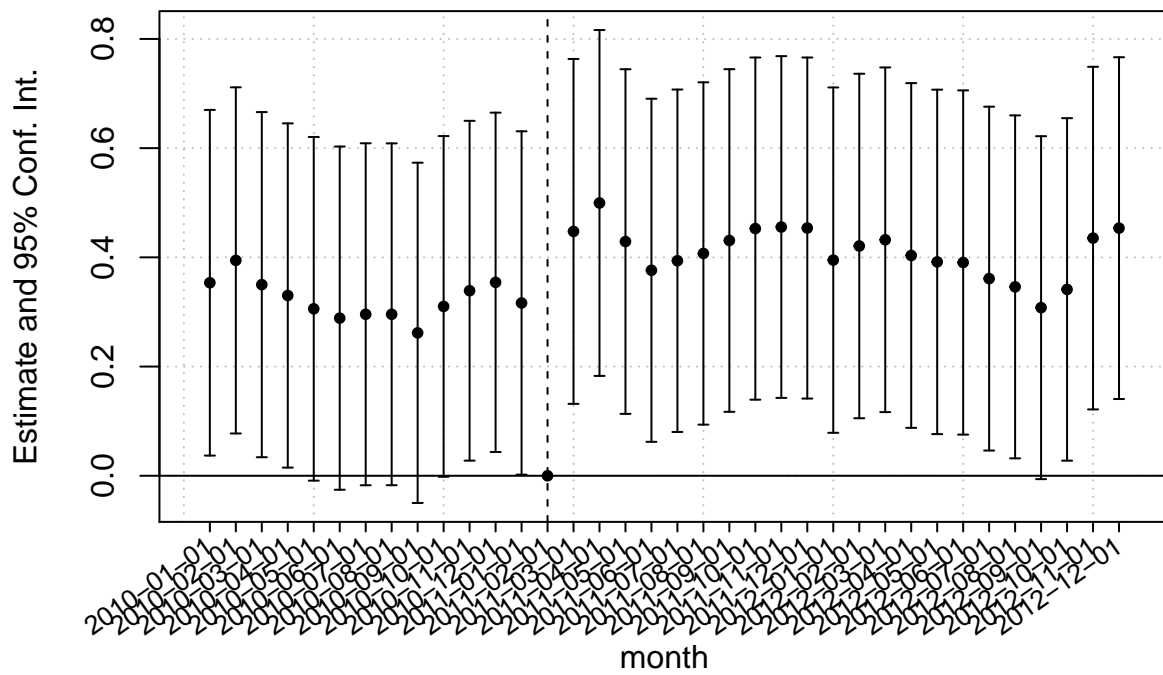
Effect on Vol_dies

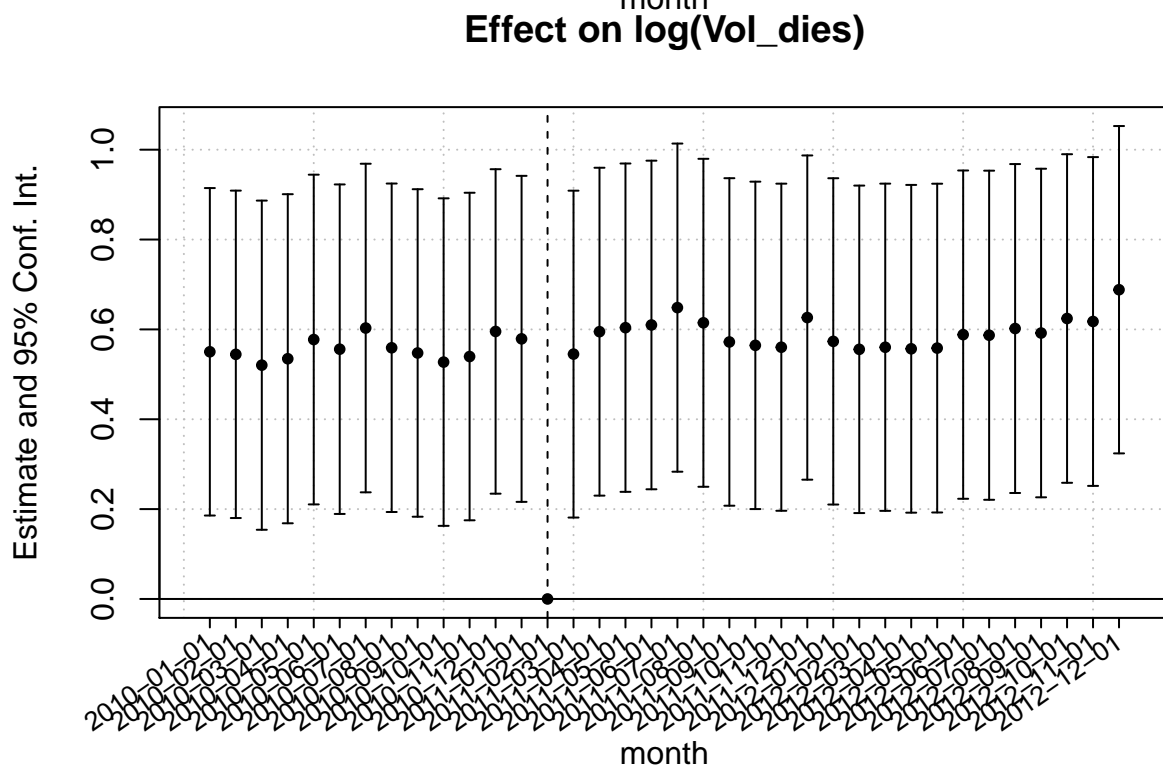
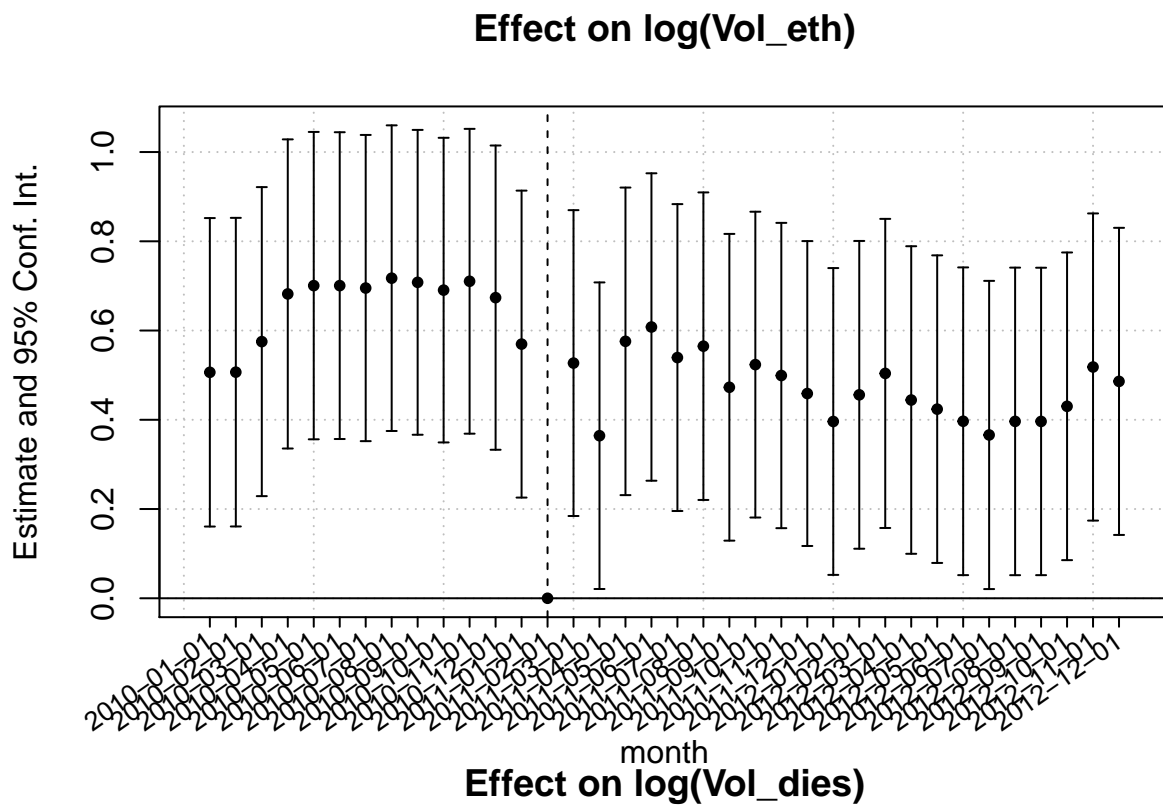


Effect on log(Vol_tot)

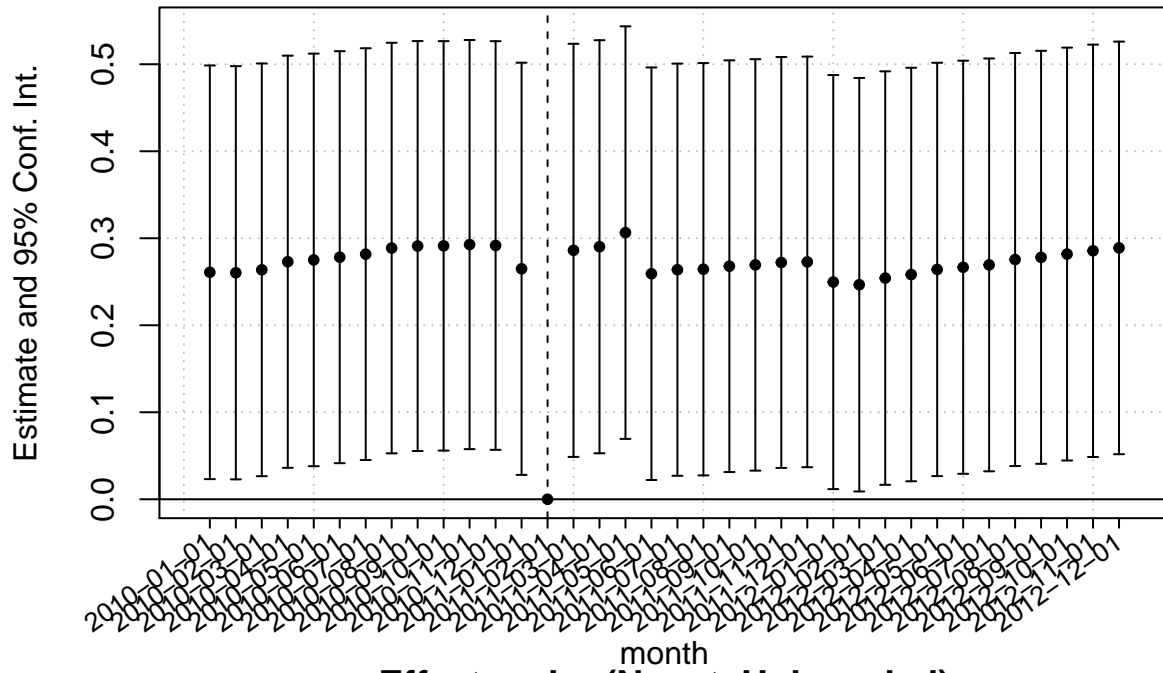


Effect on log(Vol_gas)

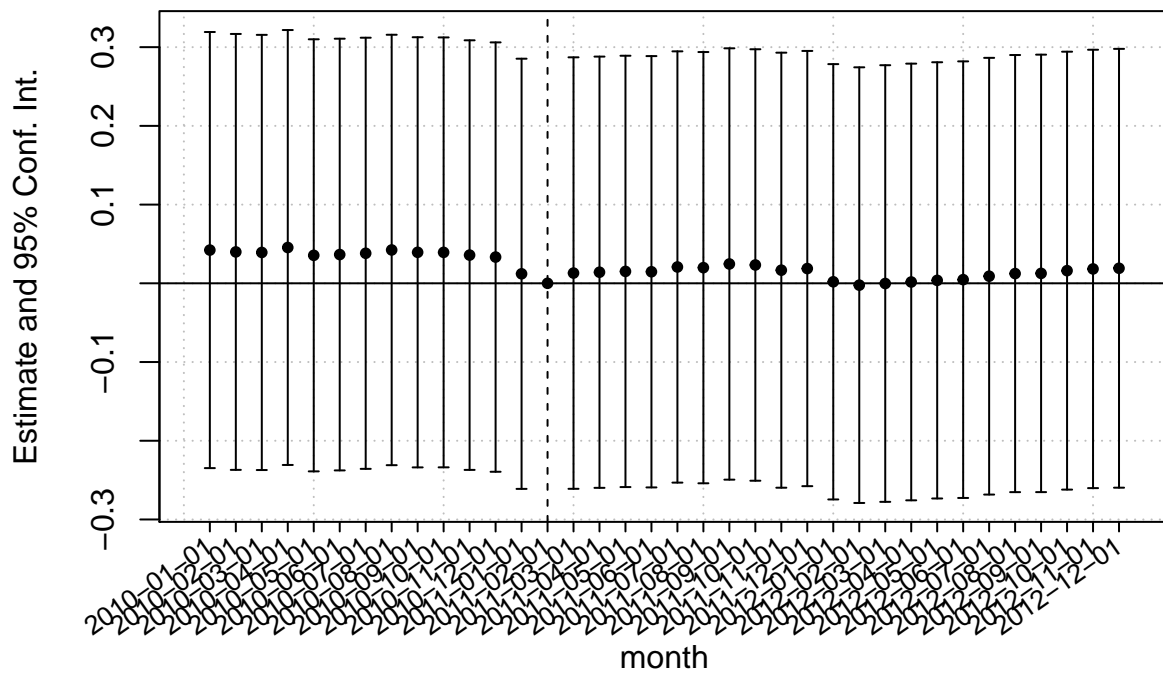




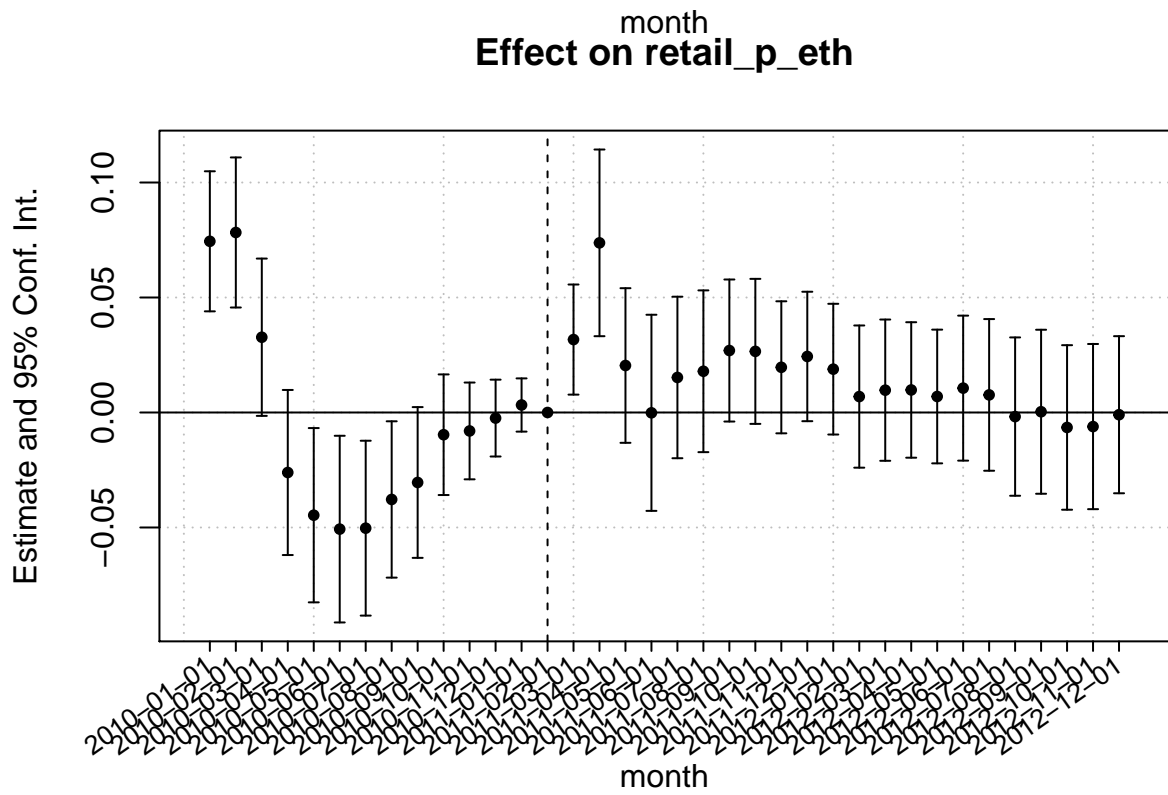
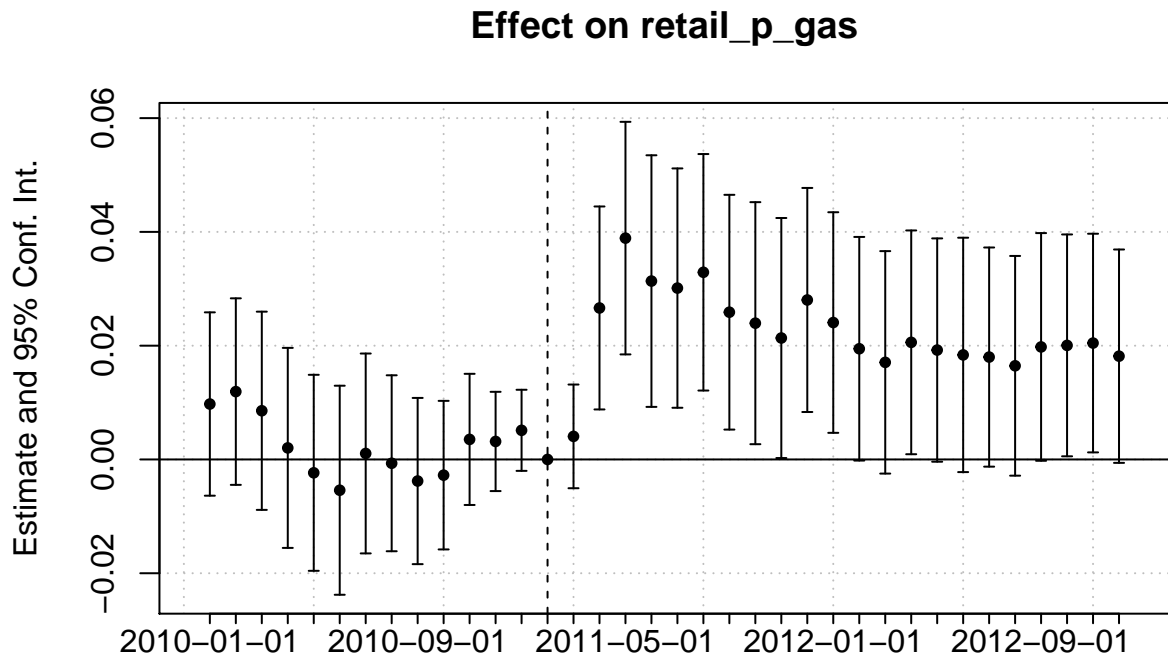
Effect on log(No_st_total)



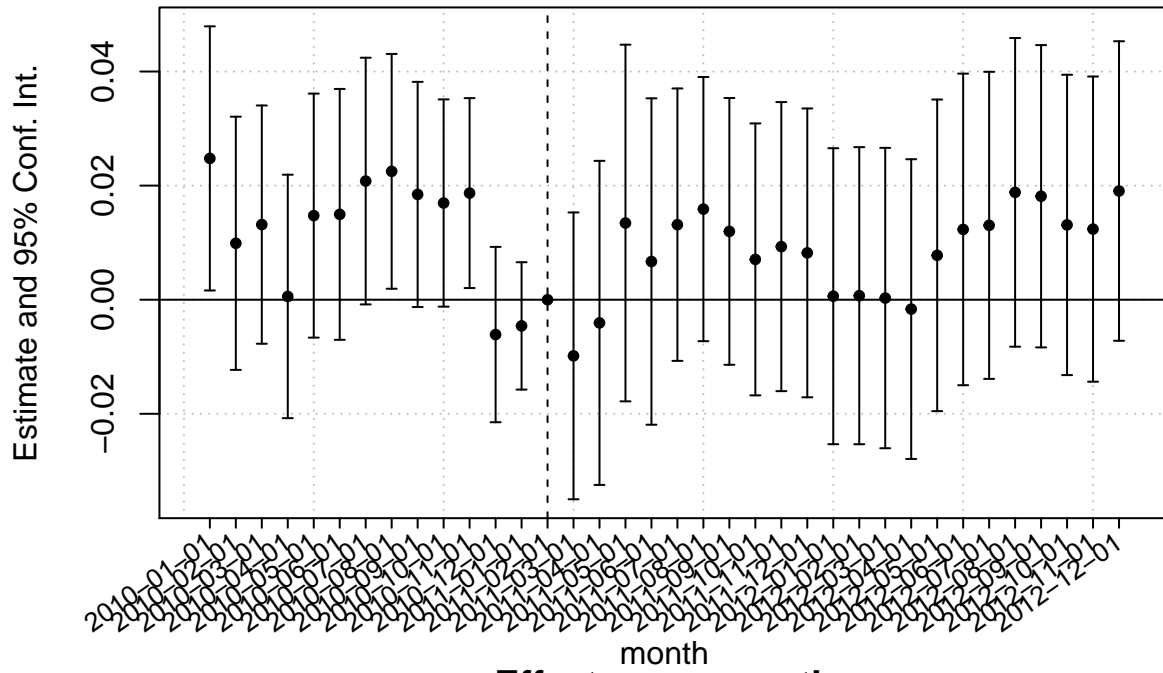
Effect on log(No_st_Unbranded)



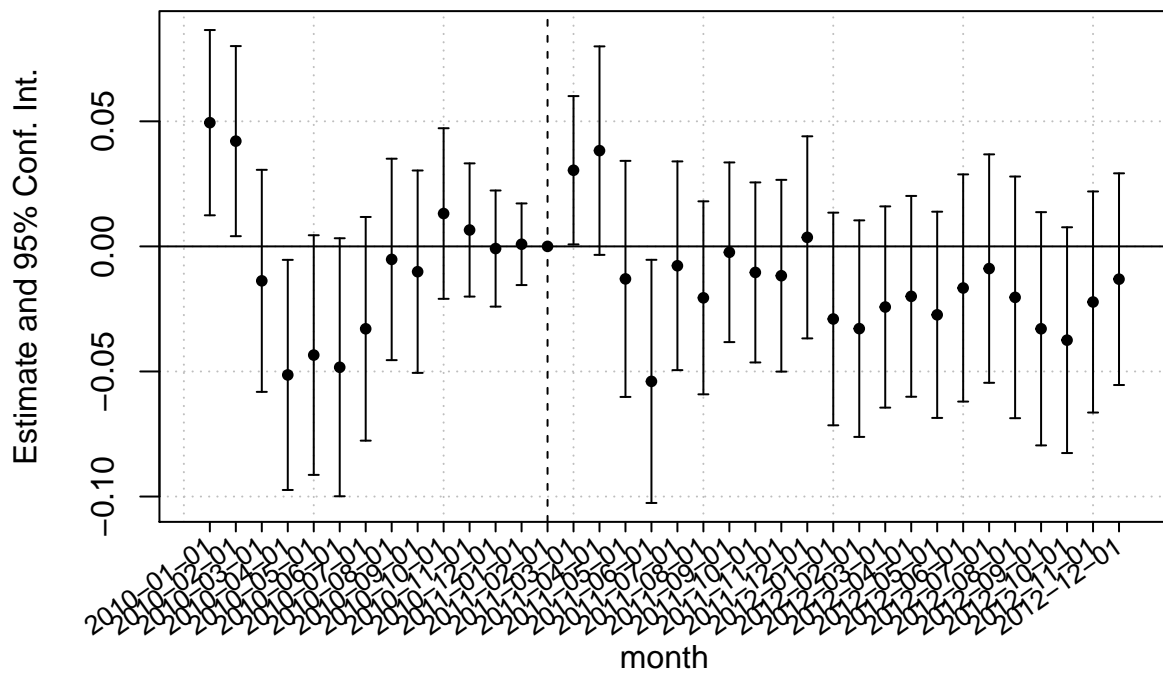
Just One as treatment, None as control



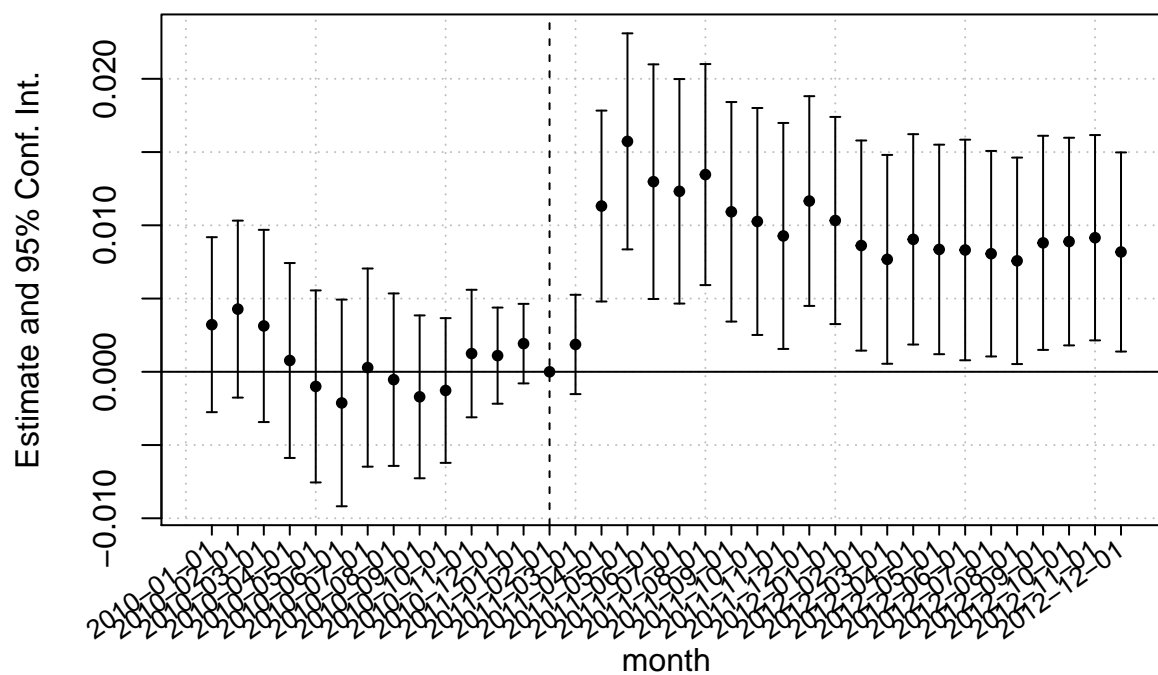
Effect on ws_p_gas



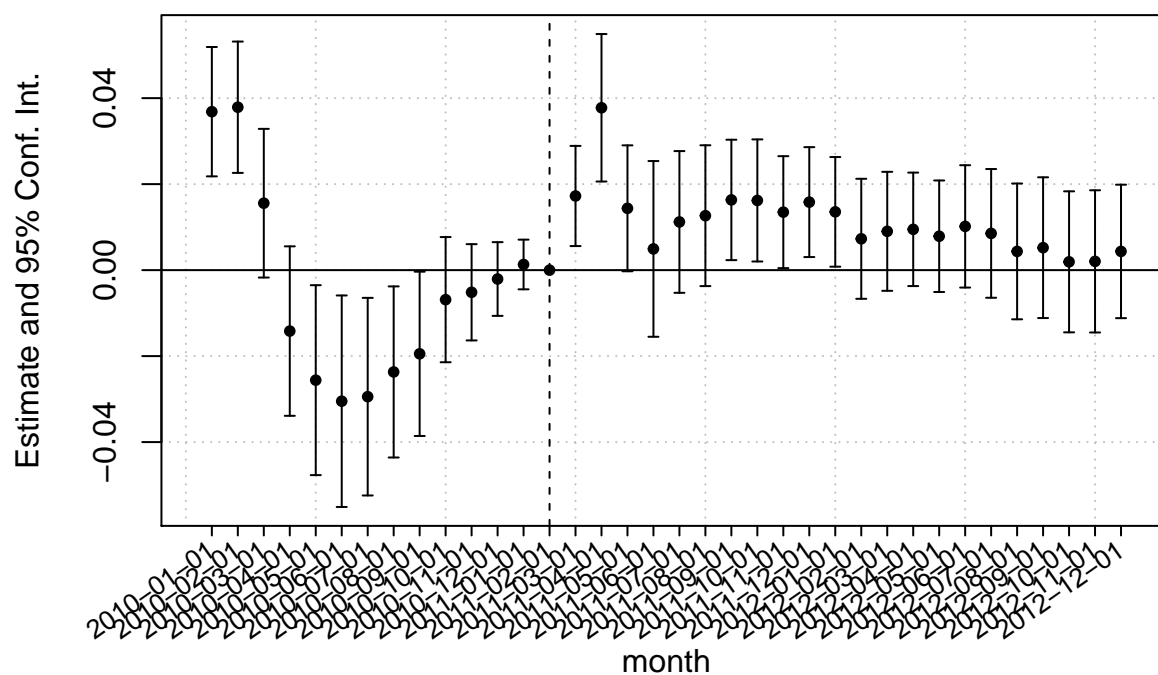
Effect on ws_p_eth

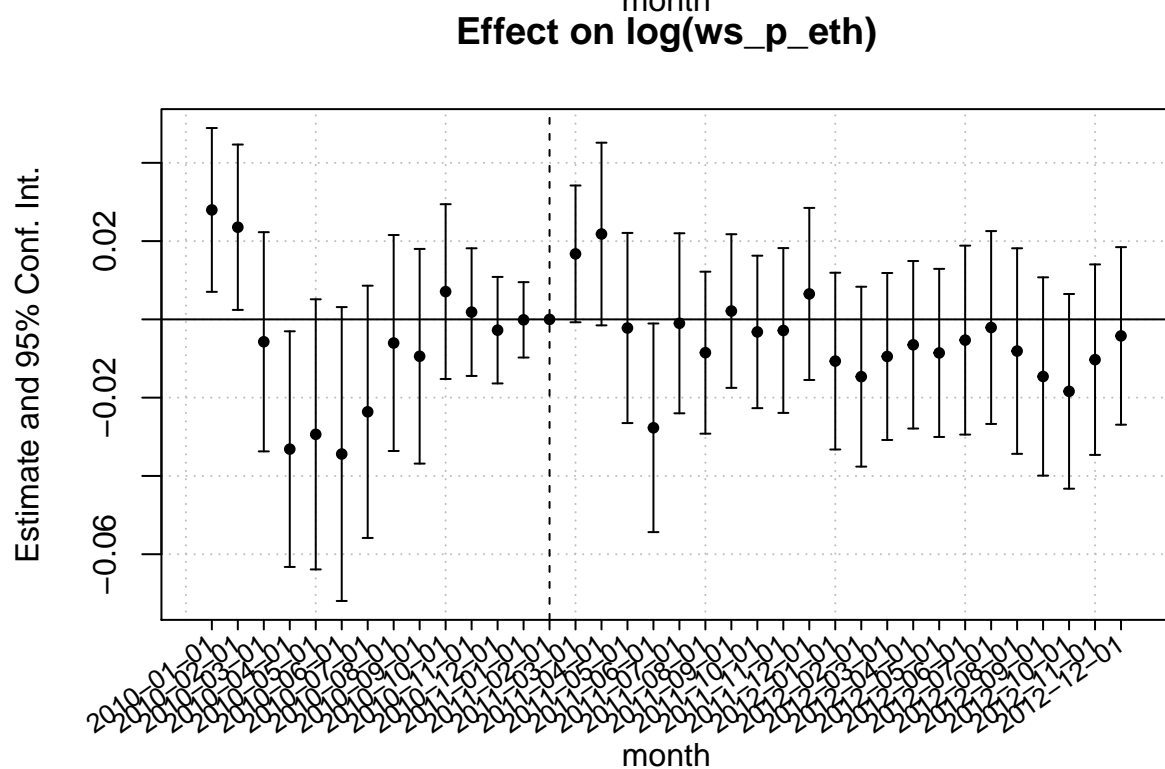
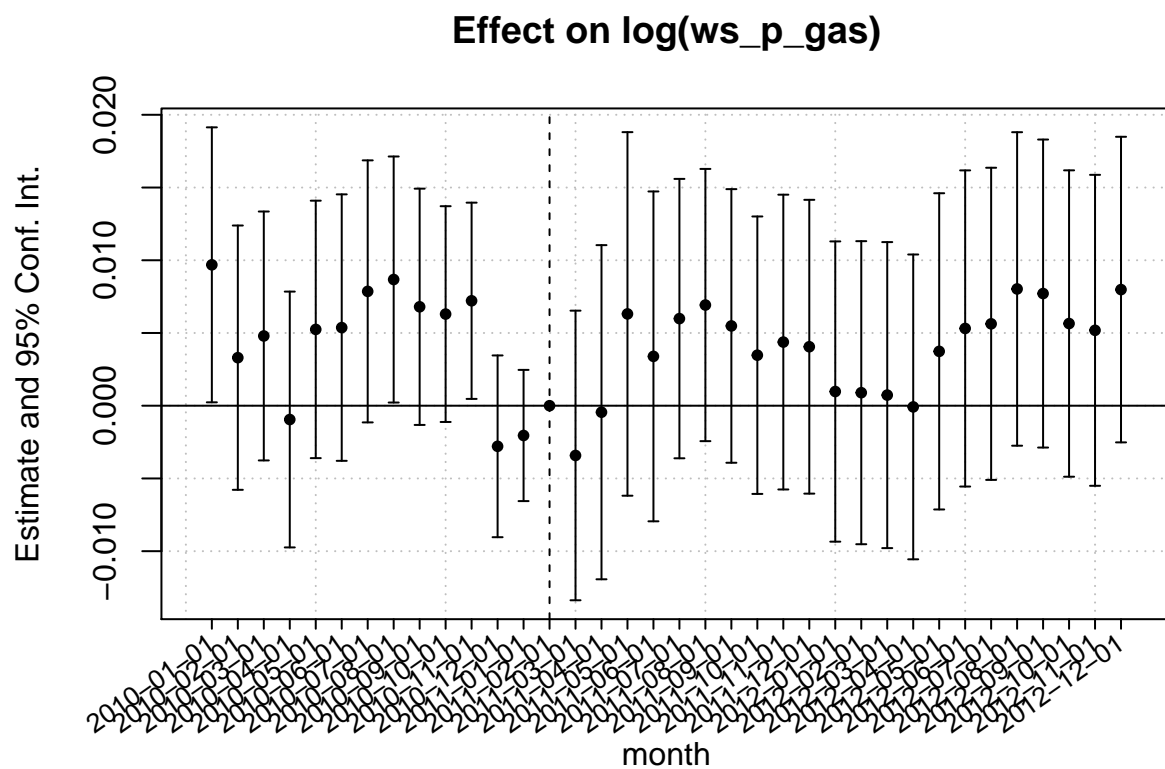


Effect on log(retail_p_gas)

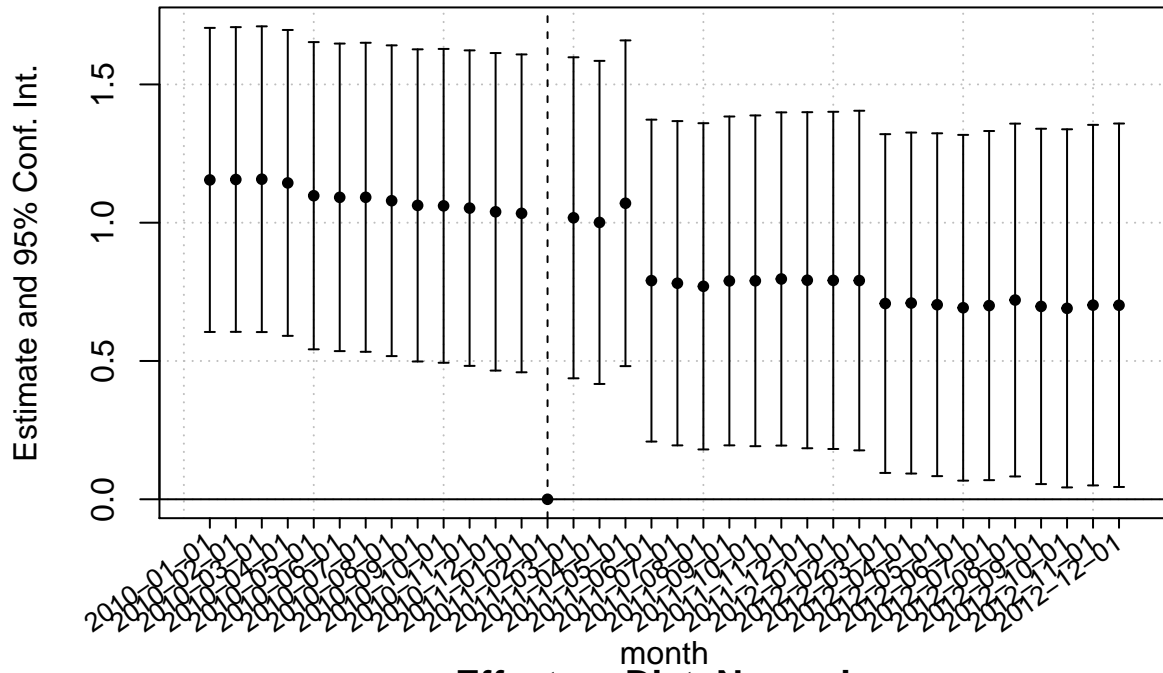


Effect on log(retail_p_eth)

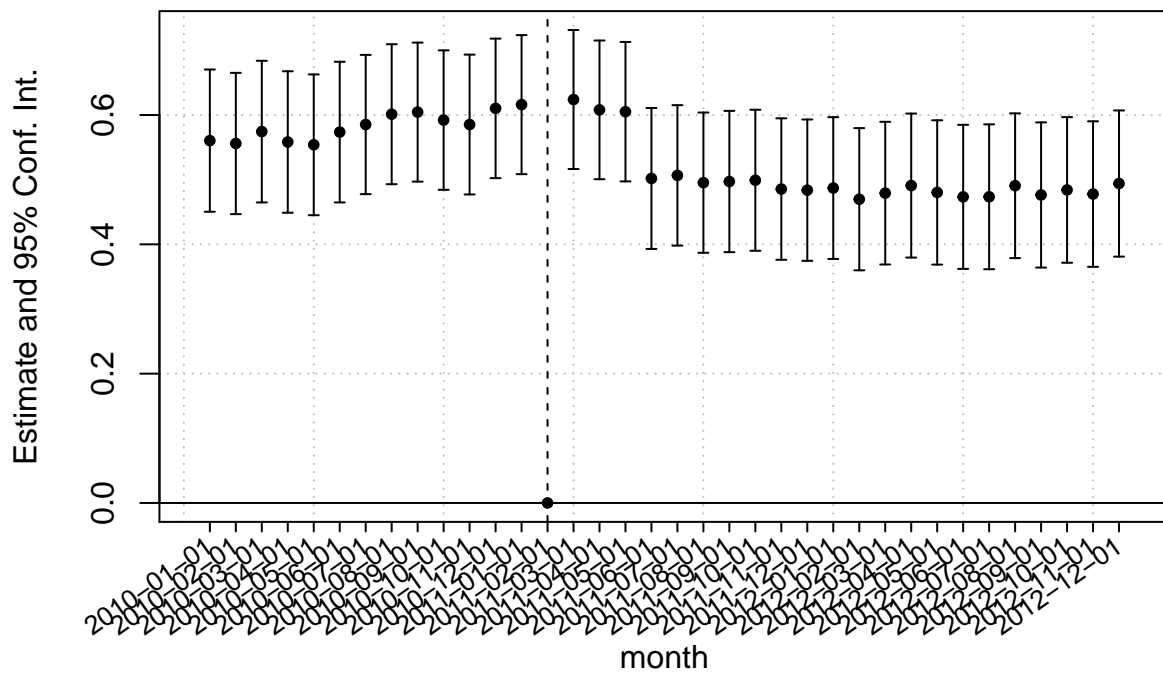




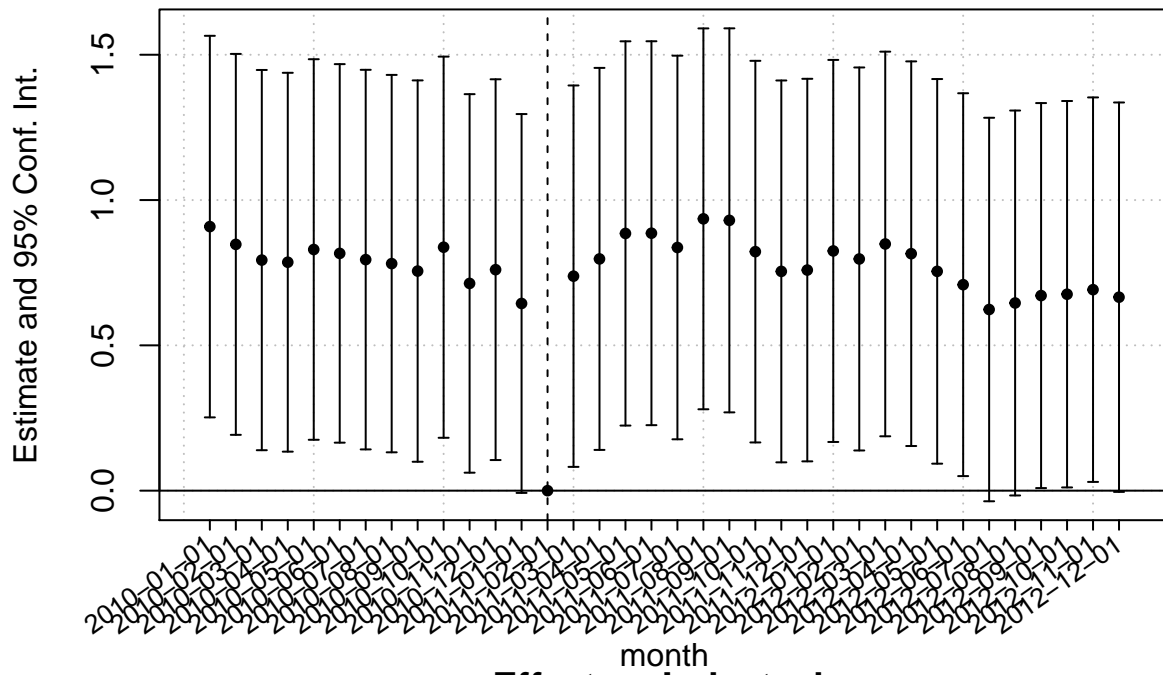
Effect on No_st_total



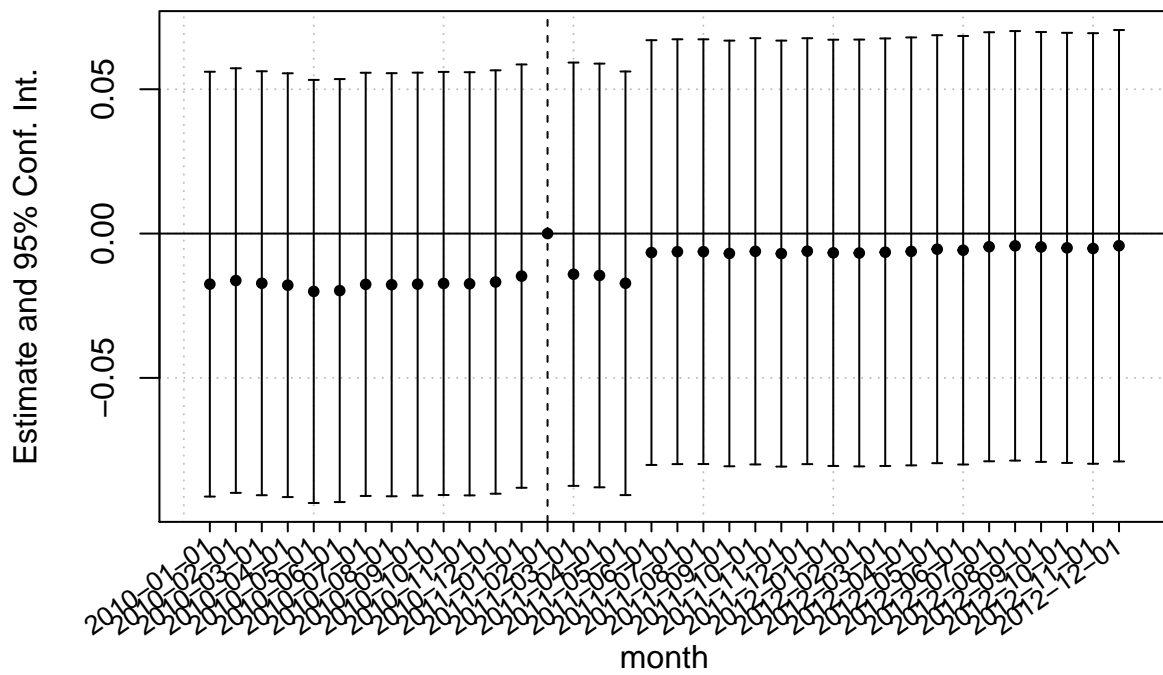
Effect on Dist_No_main

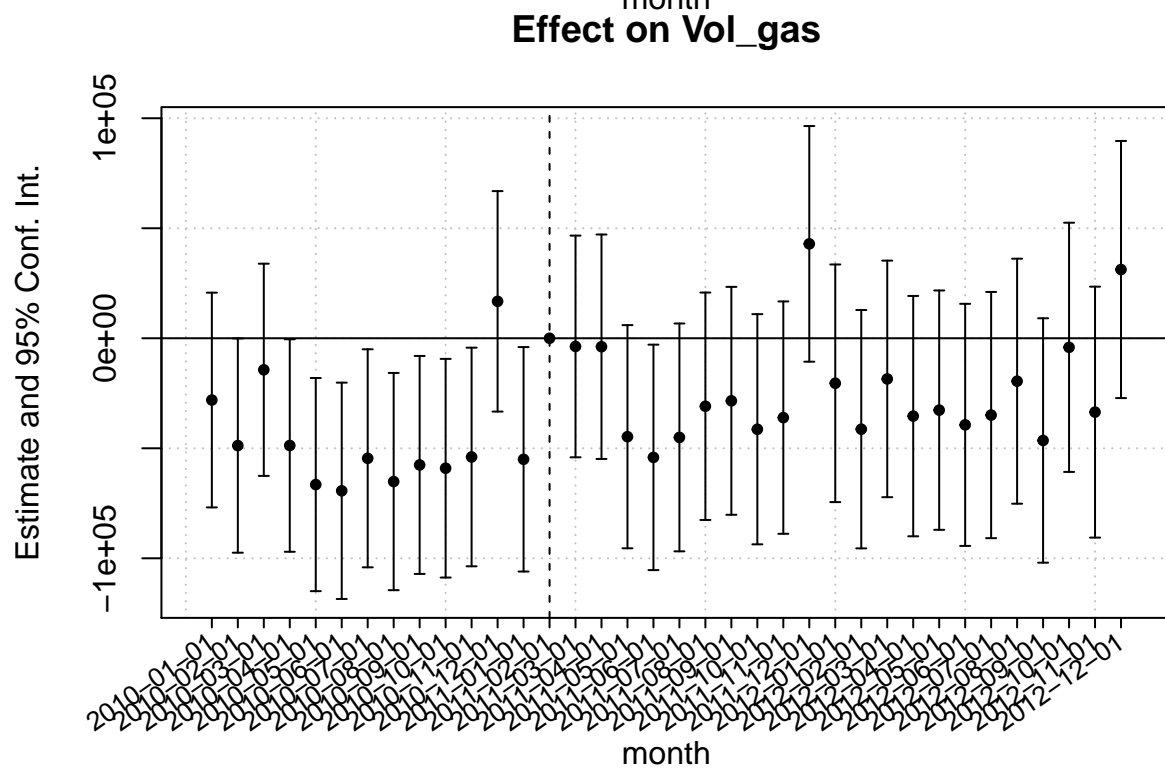
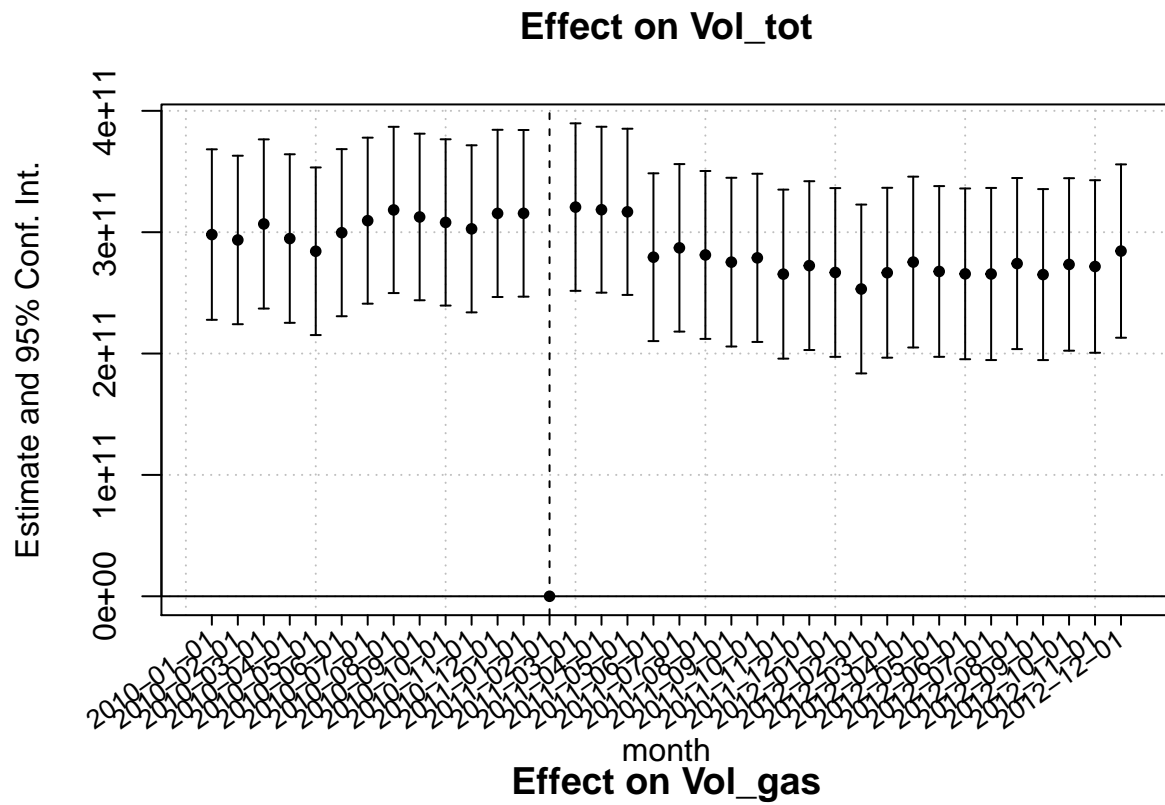


Effect on Dist_No_other

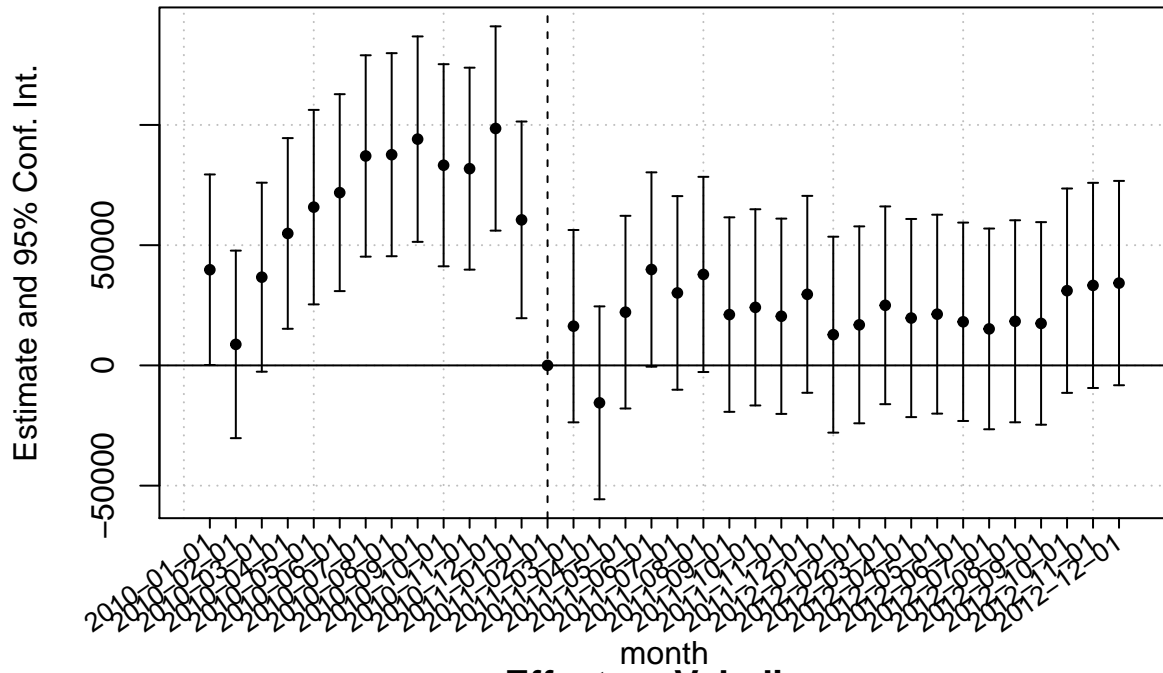


Effect on Ind_st_sh

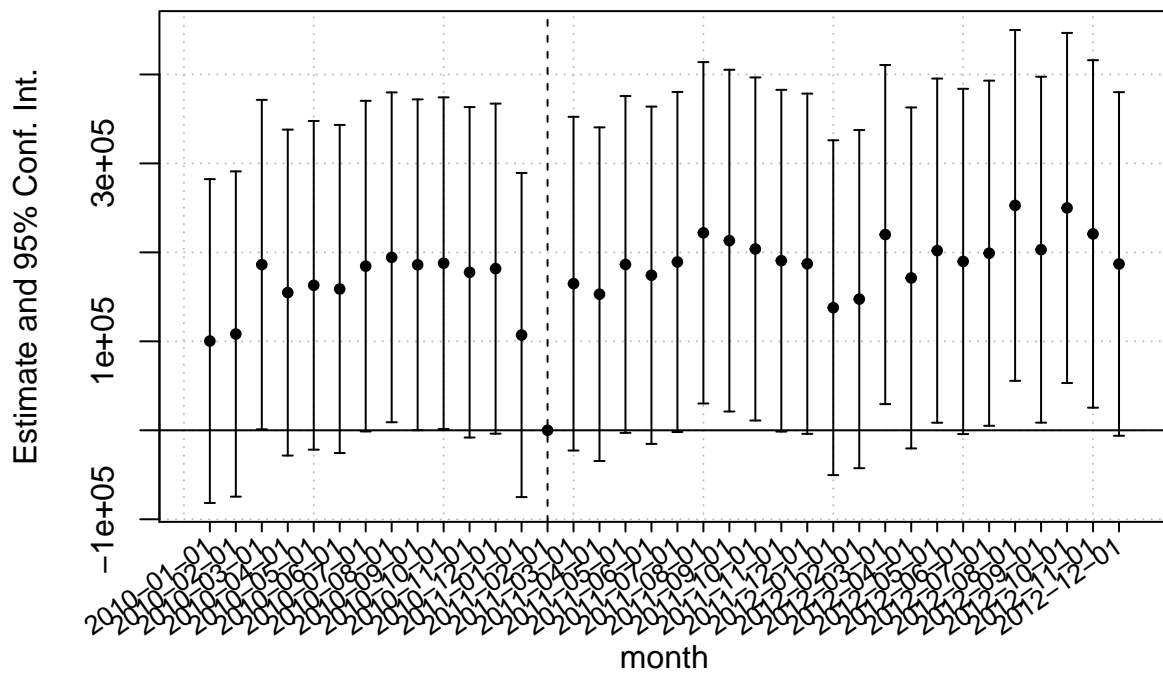


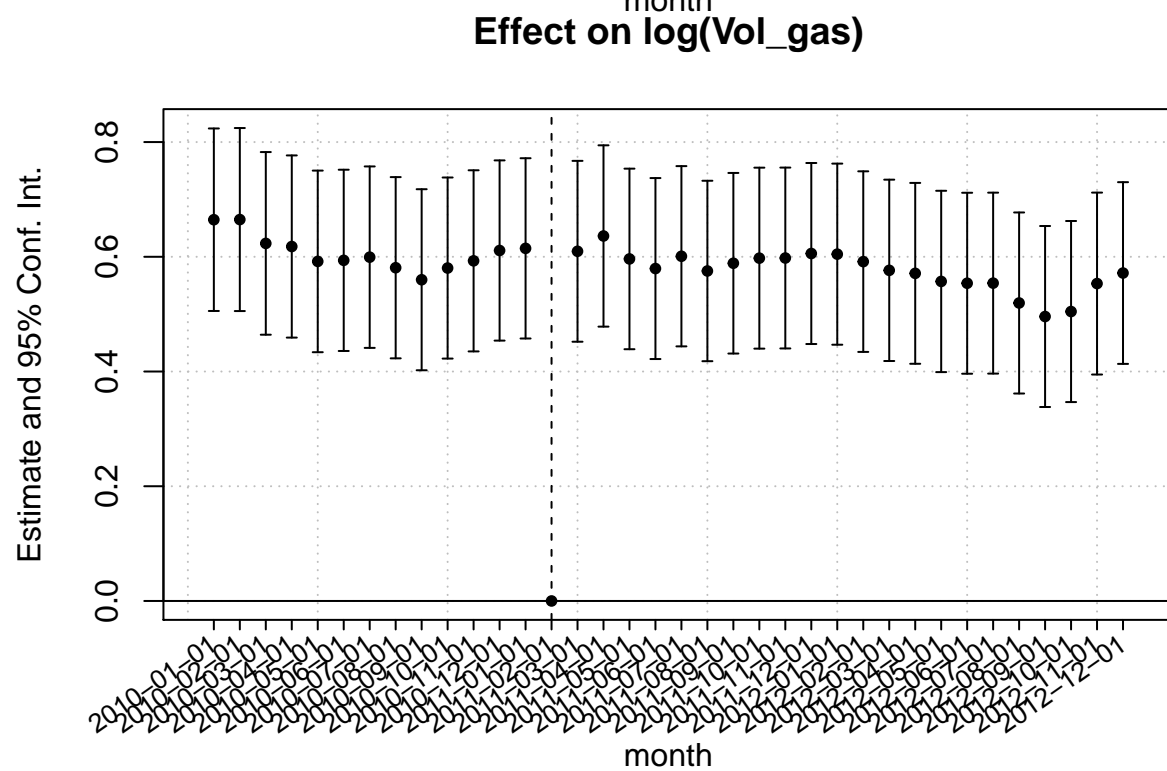
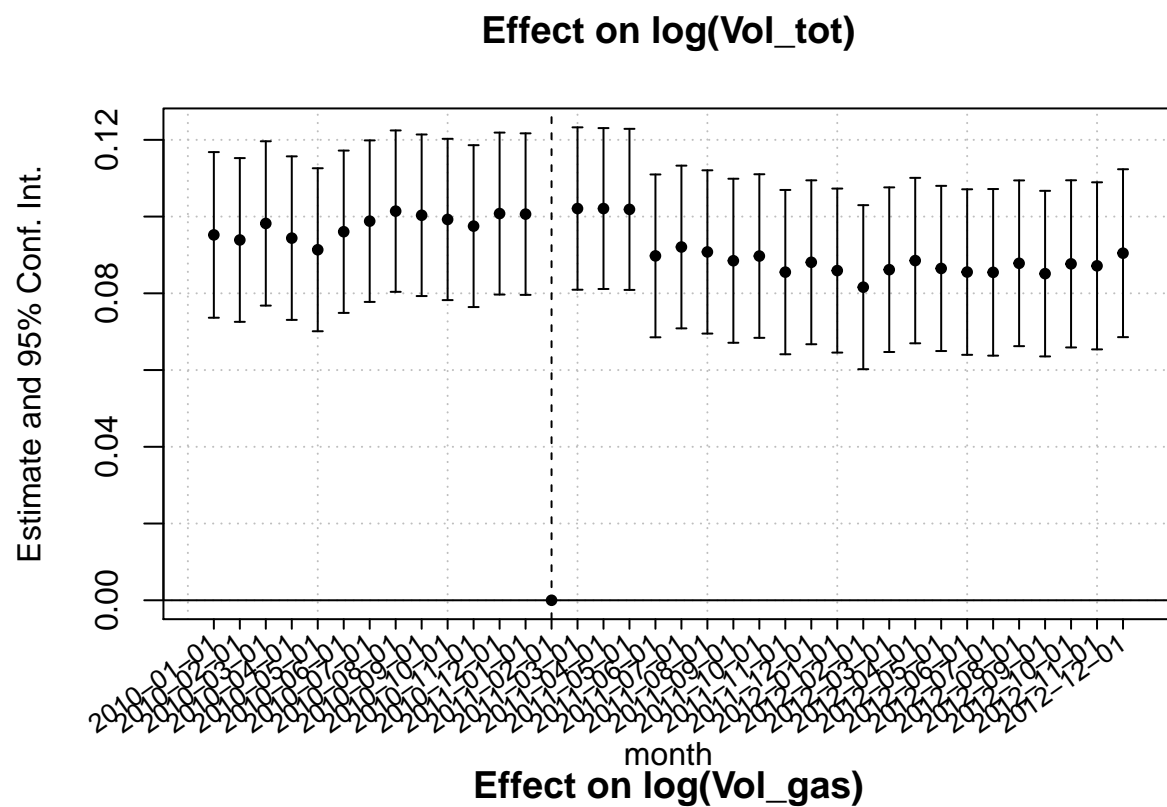


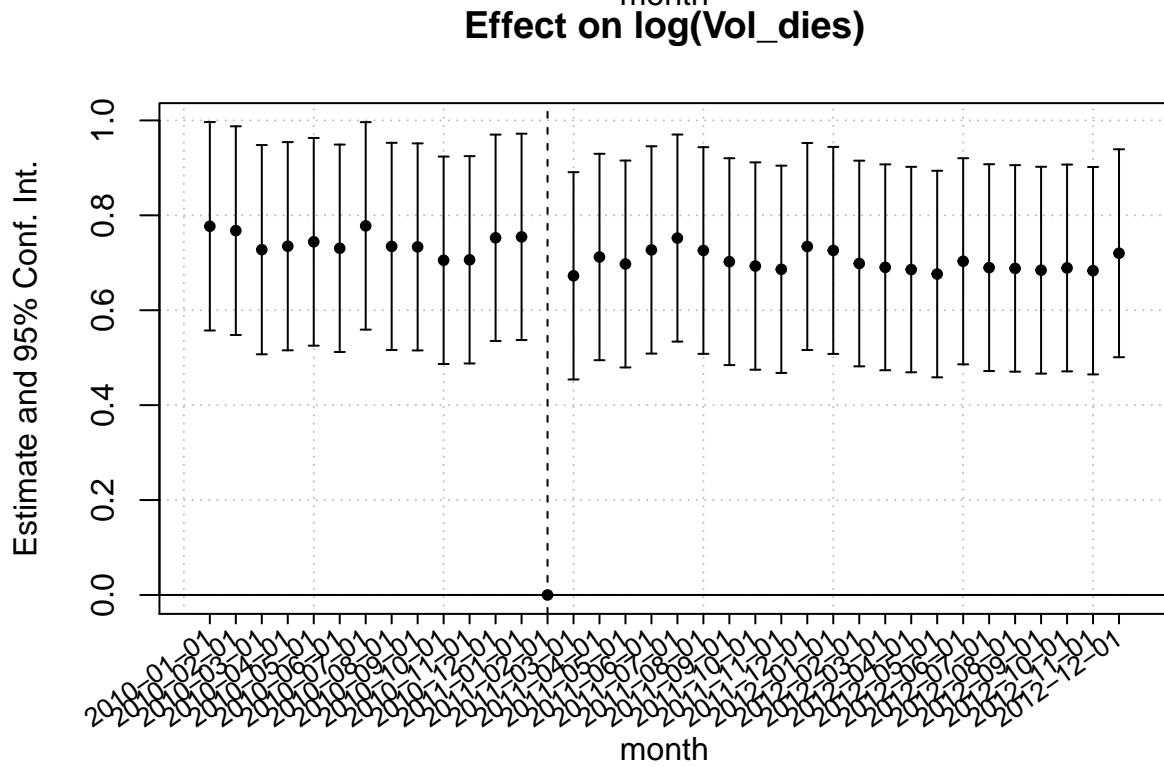
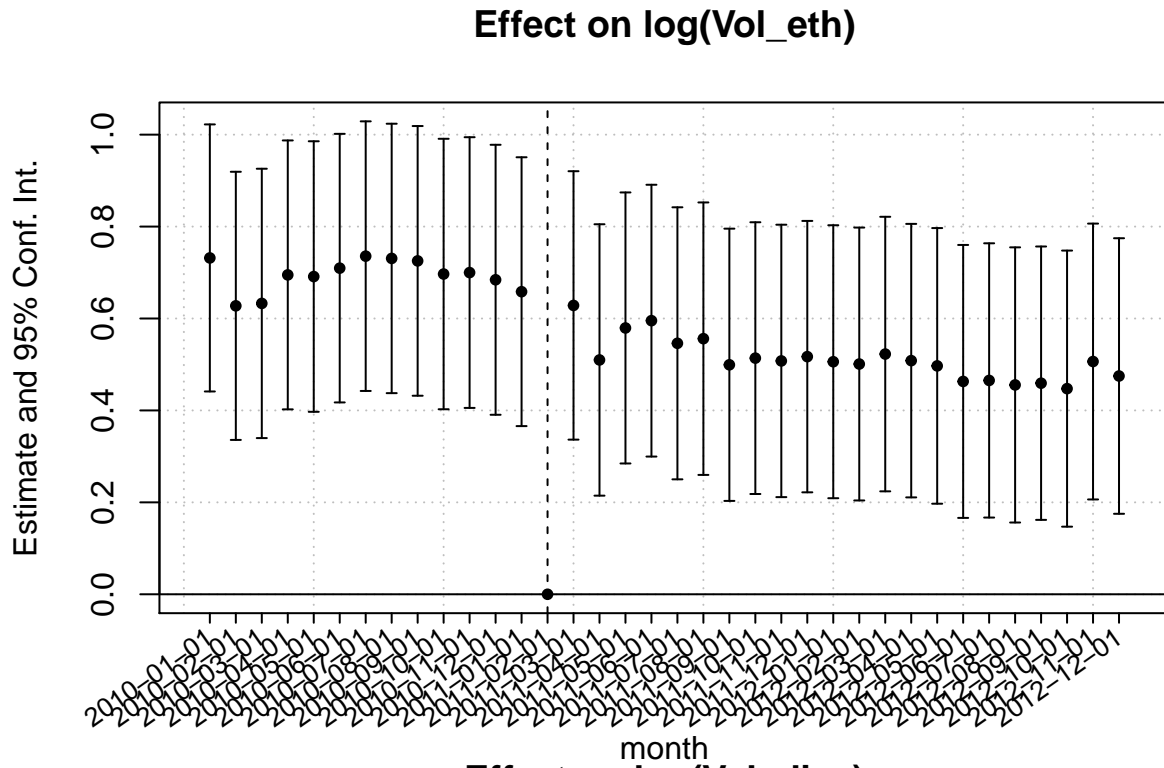
Effect on Vol_eth



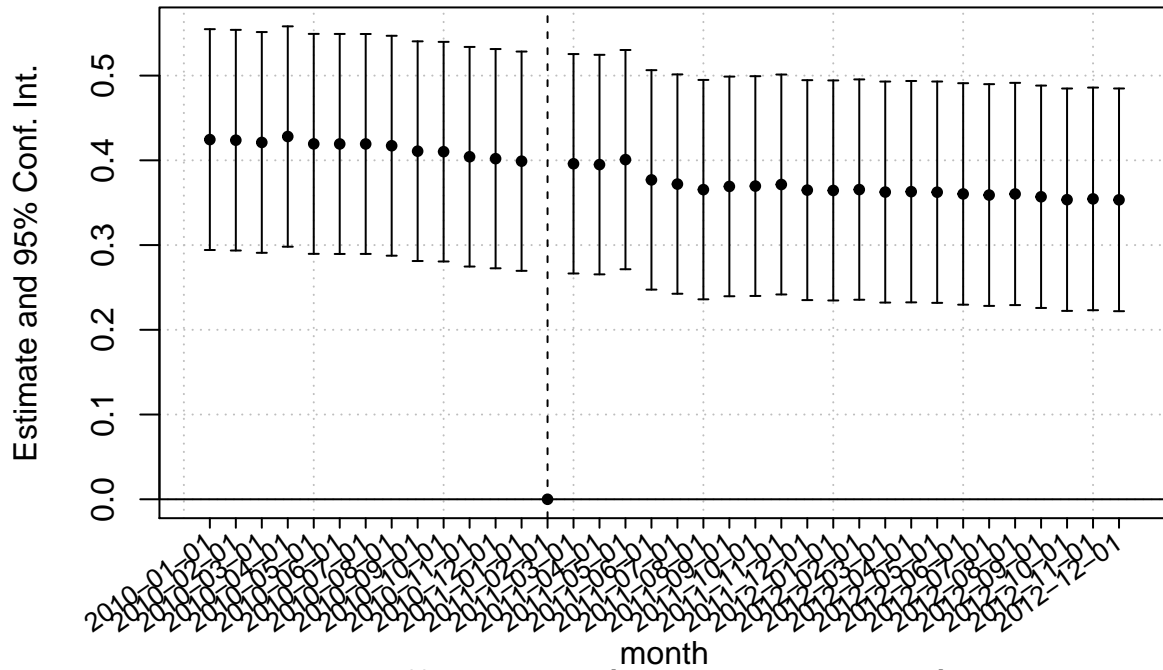
Effect on Vol_dies







Effect on log(No_st_total)



Effect on log(No_st_Unbranded)

