What if the Biggest EU Member States had Emulated Sweden’s Outstanding Carbon Tax?

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**ABSTRACT**

It has been established that the Swedish Carbon Tax has led to a decarbonisation of residential heating there. Intuitively this raises the question as to where the EU might currently be with respect to greenhouse gas emissions had other EU countries followed the Swedish example? To estimate the opportunity lost it is necessary to know the price elasticity of demand for fossil fuel-based home heating in Sweden. In a seminal work focusing on the Swedish Transport Sector, Julius Andersson has however shown that it is also necessary to know the carbon tax elasticity of demand for fossil fuel-based home heating. He finds the latter to be three times higher than the former for the transport sector. In this empirical work we use the ARDL bounds econometric approach to estimate both elasticities for demand for oil-based home heating in Sweden for the period 1970 – 2018. The advantages of the bounds approach are that there is no prerequisite that the variables used must have the same order of integration and the test is applicable with small sample size sizes. In a development of work first presented at the World Bank Carbon Pricing Conference in Delhi in 2018, we use the estimated elasticities to simulate how a high carbon tax at the Swedish level would have affected demand in the residential sectors of France, Germany, Italy, Spain and the UK had it been in place from 1997 on (the year the Kyoto Protocol was signed). Our estimates incorporate reduced demand, fuel switching and innovation.