

MAJOR REFORMS IN ELECTRICITY PRICING: EVIDENCE FROM A QUASI-EXPERIMENT

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SUMMARY

We know that in a rational context a two-part tariff (TPT) is a pricing scheme which, by means of a fixed charge, guarantees the recovery of fixed costs by natural monopolies; moreover, it ensures allocative efficiency if the per-unit price equals the marginal cost. By fixed charges, we mean all non-volumetric price components of the electricity tariff, excluding taxes and commercialization rates. However, countries in the European Union (EU) understand fixed charges differently: in some of them, they are referred to as a standing charge, service charge, customer charge, connection charge, etc., and are usually charged as a fixed amount per day/month/year, e.g., Austria, Belgium, Germany, Ireland, Poland, and Sweden. In other countries, the fixed charge corresponds to a fixed amount per contracted power load (€/kW), e.g., Finland, Greece, Portugal, Slovenia, Slovakia and Spain. Finally, other countries establish both connection and power capacity charges, e.g., Italy, France, and the Netherlands. Because fixed charges are independent of the quantity consumed, consumers have no incentive to change their consumption quantities in response to a fixed charge. This allows the industry to raise revenues to cover fixed costs and minimizes deadweight losses. However, if consumers fail to separate fixed charges from marginal prices in their consumption decisions, the price signals sent may well be distorting in the short- and long- run, jeopardizing cost recovery, investment decisions and allocative efficiency.

This is especially relevant for the electricity industry, which has traditionally operated a TPT in most countries and faces a major investment cycle, given the need to decarbonize the sector to confront the climate crisis. Fixed charges in electricity bills have been low in general and markups on the volumetric price component have largely covered fixed costs. The transition to a low-carbon power sector is triggering a shift in the cost structure, with intensification of capital costs while variable costs are declining because of an expanded renewable energy supply. As a result, current electricity pricing systems are proving inadequate to warrant the fixed-cost recovery as acknowledge by the European Commission in 2015. We use panel data from the Spanish Household Budget Survey to analyze the 2013 major Spanish electricity reform, to provide quasi-experimental evidence on the reduction of electricity consumption when households face an increase in the fixed charge of their electricity bill, despite a simultaneous decrease in the marginal price. This strongly suggests that consumers fail to discriminate between marginal and fixed costs and thus optimize consumption at the average price rather than the marginal price. The impact of a reform of this kind is heterogeneous across households and electricity price increases brought about by a rise in the fixed-charge component are regressive. We show by means of quantile regression that the highest electricity consumers reduce their electricity consumption and expenditure the most, while the lowest electricity consumers fail to respond at all. These results have timely and far-reaching policy implications for upcoming reforms to electricity pricing at EU level.