

The effectiveness and distributional consequences of excess profit taxes or windfall taxes in light of the Commission's recommendation to Member States

Background



The current energy crisis is in essence a shock in natural gas prices, which also affects electricity prices. Energy prices had been increasing in Europe for over a year before the Russian invasion of Ukraine in February 2022. With the economic recovery in 2021, global natural gas demand bounced back to pre-pandemic levels and outstripped supply. European natural gas prices increased further following the invasion of Ukraine, and surged after Russia began restricting its exports to the EU in June 2022. Since many power plants are gas-fired, the lower natural gas supply induced an increase in electricity prices. Wholesale electricity prices are not homogeneous across Member States and reflect different levels of dependency on

natural gas imports and of electricity interconnection with neighbouring countries. This upsurge in energy prices has dramatically increased firms' input costs and households' energy expenditure.

For some companies, this surge of energy prices has come as an opportunity. Many energy firms have seen their profits and stock prices rise, earning rents from the increase in coal, oil and natural gas prices. This surge in prices lead to substantial windfall profits in the energy sector. Windfall profits' are profits that do not stem from direct and planned actions of a firm but from unanticipated external changes in the market conditions, changes that could not have been foreseen at the time when the initial investment decision had been taken. While the benefits mainly went to firms that extract fossil fuels, profits have also increased for oil refineries and not-gas-or-oil-fired electricity generators.

The present document is the executive summary of the study on The effectiveness and distributional consequences of excess profit taxes or windfall taxes in light of the Commission's recommendation to Member States. The full study, which is available in English can be downloaded at:
[https://www.europarl.europa.eu/RegData/etudes/STUD/2023/740076/IPOL_STU\(2023\)740076_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2023/740076/IPOL_STU(2023)740076_EN.pdf)



Meanwhile, countries face fiscal pressures to support post-COVID economic recovery and alleviate the strain on vulnerable households and firms arising from the high-energy prices. At the same time, there is the need to contain inflation, maintain energy security, and transition to renewable energy.

Against this background, the "Council Regulation on an emergency intervention to address high energy prices" includes the introduction of windfall profit taxes, i.e. a revenue cap on inframarginal technologies and a solidarity levy for the fossil fuel sector, in a unified framework, to avoid negative spillovers within the European energy market caused by uncoordinated national measures.

The revenue cap on inframarginal technologies caps market revenues at a minimum of 180 euros per MWh for specific electricity generators. Revenues exceeding the pre-defined threshold are considered as windfall profit and to be collected up to 90% in the majority of Member States.

The solidarity levy for the fossil fuel sector defines the windfall profit based on the average earnings method. Windfall profits are profits that exceed 120% of the reference period, defined as the average profit of 2018 to 2021, and are subject to a tax rate of at least 33%.

Aim

The aim of this study is to analyse the effectiveness of windfall profit taxes, in particular with respect to the Commission's recommendation to the Member States and to quantify the potential tax revenues. Moreover, the study briefly summarizes considerations on the distribution of collected revenues.

To this end, the study discusses design features of windfall profit taxes and summarizes historical experiences. Based on these insights, the study briefly presents the content of the Council Regulation and provides an overview on windfall profit taxes already implemented in the EU. For a better understanding, the study describes the basic functioning of power markets in the EU and discusses the role of coordination for windfall taxes as a policy tool. Furthermore, one aim of the study is to quantify the level of expected tax revenues. The quantification of the solidarity contribution is based on firm level profits and reference profits from the ORBIS database. The quantification of the revenue cap uses data on day-ahead-prices and actual generation volumes by production type from the ENTSO-E Transparency Platform. Finally, the study provides a critical analysis of the foreseen measures with respect to its effectiveness of collecting revenue but also evaluating efficiency issues and redistribution potential.

Key Findings

Companies active in the oil and gas industry faced pronounced increases in profits in 2022. This is in line with the argumentation of the Council of the EU that these companies benefited from excess profits that do not correspond to any regular profit that they could have expected to obtain.

Within the framework of the Regulation, Member States have some leeway for implementing the revenue cap and the solidarity contribution. The comparison of national implementations shows that Member States indeed use their leeway. We observe that Member States frequently use their ability to implement a stricter **cap on market revenues** from inframarginals. In addition, several countries rely on different caps depending on the underlying technology used to generate electricity. Implementation is mostly dated to the 1st of December 2022. The application phase in most countries expands to the end of 2023. Most EU Member States follow the proposed average earnings method to define the tax base for the **solidarity contribution** for the fossil fuel sector. Still, we find some variation in the implemented tax bases. The applicable tax rate ranges from the minimum tax rate of 33% to 75% in Ireland. Largest variation exists in the respective application period of the solidarity contribution.

For our sample data, we find that the proposed solidarity contribution and the revenue cap fulfil the objective of collecting tax revenue. This revenue could -in a second step- be redistributed according to the Member States' priorities to face specific hardship of the energy crisis. Applying the selection criteria for the application of the solidarity contribution on the Orbis database results in a sample of 293 firms. Based on these firms' profits for 2021 and reference profits from 2017 to 2020, we compute an aggregate tax revenue for the solidarity surcharge. The quantification shows that, based on the data selection process and calculation assumptions described, the calculated tax revenue for the solidarity contribution amounts to 4.4 bn Euro. For the calculation of tax revenue from the revenue cap, we use (hourly) day-ahead prices per bidding zone covering the period 01.01.2022-31.12.2022. Descriptive analysis shows that in more than 200 days in the year 2022, the average day-ahead price exceeded the cap of 180 Euro. In total, according to our calculations and based on the assumptions described, the calculated tax revenue from the revenue cap amounts to 106 bn Euro. Almost half of the tax revenue from the revenue cap stems from taxing windfall profit taxes on revenues from lignite (50.5 bn EUR), followed by onshore wind (30.9 bn EUR), biomass (16.7 bn EUR), and offshore wind (7.9 bn EUR). It is important to note that these estimates need to be interpreted against the backdrop of the available sample period for this study. Actual tax revenues can turn out to be very different in light of the changing market conditions, i.e. decreasing power prices in the early months of 2023.

Introducing the solidarity contribution and the revenue cap imposes a double taxation since the respective tax base of both windfall taxes is already part of the tax base of the corporate income tax. Consequently, Member States are also in the absence of windfall profit taxes collecting taxes on these excess profits via the corporate income tax. Double taxation is problematic because it amplifies the asymmetric taxation of profits and losses thus reducing investment and (risky) innovation incentives.

In theory, taxes on economic rents are efficient since they do not reduce investment. The tax applies only to returns above what is required to invest. Yet, empirical evidence finds that historical windfall taxes affected investment. The US excess profits tax on domestic oil production of the 1980s significantly reduced production of affected oil wells.

One of the most problematic aspects of (temporary) windfall profit taxes is that firms might anticipate the introduction of these types of taxes in other sectors. When confidence into a reliable tax system is lost, uncertainty increases and affects future investments negatively.

In addition, excess profits can have an important signalling function. They highlight scarcity and provide an incentive for market entry or for expanding production capacities. Taxing excess profits reduces these incentives, which could be detrimental for the economy. In this vein, levying windfall profit taxes on renewables is not straightforward given the relevance of these energy sources for alleviating the crisis of energy supply and for facilitating decarbonisation.

The extent to which the imposition of the current proposed windfall taxes changes the behaviour determines both the deadweight loss of such taxes and the effectiveness of tax collection. Other than investment, behavioural responses could include avoiding the applicability of the tax (e.g. by splitting up activities or reallocating profits). This, however, is not possible with retroactive windfall profit taxes.

A cap on excess revenues of inframarginal technologies has the potential to be more precise compared to a general profit tax, as it can be targeted on exactly those additional revenues that are considered to generate excess profits. On the contrary, being quantity based, such levies risk distorting production decisions, thus giving rise to allocative inefficiencies. The risk is limited by the restriction on inframarginal capacities with sunk investments and by the still significant profits that are possible below the cap of 180 EUR/MWh. In markets with large producers, with a diverse generation portfolio, the cap might lower the cost to withhold inframarginal capacities to raise overall prices and earn higher profits on non-capped installations. Possible counter measures are (i) close scrutiny by competition authorities and (ii) to collect less than 100% of the excess revenues. From an allocative efficiency perspective, the cap included in the

Regulation is not strategically neutral to market participants, but clearly superior to alternative measures that affect price formation overall, such as subsidies to marginal technologies or a departure from uniform pricing.

Since the Council Regulation is silent on the measure to distribute the collected revenue to vulnerable households or hard-hit firms, Member States will be able to tailor the measures according to their country specific needs. According to prior research, untargeted measures are a rather expensive way of reaching poor households. Moreover, incentives for reducing energy consumption should be restored as soon as possible

In view of global capital mobility, a coordinated introduction of excess profit taxes is preferable to reduce the scope for tax arbitrage. Moreover, uncoordinated measures of EU Member States risk inducing diverging outcomes in neighbouring markets that are not grounded in fundamentally different economic conditions. The market coupling mechanism (which in principle maximises overall allocative efficiency) would then result in trade flows and additional costs and windfall profits that are driven by the diverging regulatory framework.

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