Carbon Price Signal in the Italian Electric Power Sector: The Effect of the EU ETS (Phase III)

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Overview

Carbon pricing is considered the most cost-effective way to reduce the emission of greenhouse gasses (GHG): following to the 'polluter pays' principle, it attaches a monetary value to carbon emissions – making companies and investors accountable for them.

The research paper provides an assessment of the performance of the European emissions allowance market (Phase III) in terms of its ability to establish a carbon price signal that is capable to have an impact on the choices of economic actors. In particular, the focus of the research is financial investors.

Private capital is a primary source of funding – and enabler – for the transition to a low-carbon economy. Therefore, to achieve European GHG reduction targets and stimulate the development of a sustainable low-carbon energy sector, it is crucial to identify investors' sentiment with regards to carbon, and account for them to develop a policy environment able to boost the transition.

The research is directly related to the line of literature that studies the effect of movements in the prices of EU carbon allowances on the stock returns of electrical power companies regulated by the EU ETS.
Most of the studies identify the existence of a positive relationship between movements in EUAs prices and stock returns of the relevant companies as most of them look at the outcomes of Phase I and Phase II of the EU ETS, when over-allocation of free of allowances enabled windfall profits to occur in those companies with a surplus quantity of allowances. On the contrary, against the regulatory framework of the EU ETS Phase III, carbon-intensive power producers are disadvantaged according to the carbon emissions generated in their production activities. Hence, investors reallocate part of the capital at stake to decrease their risk exposure to carbon pricing.

Methods

The research follows a two steps methodology characterized by I) a propaedeutic assessment of the environmental fertility and suitability for a carbon market rationale to exist and for a carbon price signal to be delivered to economic decision makers (in our case, financial investors), followed by II) an empirical analysis which tests the hypothesis formulated in the research question. In particular, a multivariate time-series analysis is used to compare the stock returns of a portfolio of carbon-intensive electricity producers with the stock returns of a portfolio of carbon-free power generators. The returns of future contracts of European Union Allowances (EUAs) are used as proxy for economic actors' expectations on the carbon price.

Results

The carbon price signal identified in the current research study affects to some extent the expectations of financial investors who decrease the carbon content of their investments in energy production companies accordingly. The carbon price signal stemming from the policy appears to have a modest but significant impact on the expected value of electricity production companies. Financial investors perceive carbon emissions as a pervasive risk factor, which translates into an even higher opportunity cost when renewable energy subsidies are in place.

Even though the carbon price was not sufficiently high to stimulate innovation on its own, it represented an incentive to move away from carbon-intensive investments.

Conclusions

During phase III of the EU ETS, the perceived sense of urgency of decarbonizing power production activities has been augmenting owing to the regulatory novelties introduced with respect to the previous phases and the relative policy discourse. We have proved that given the climate policy signals of the phase III of the EU ETS, the financial value of carbon-intensive companies diminishes when financial markets expect more scarcity of carbon allowances. Nevertheless, the small size of the effect observed signals that investment decisions may have been affected by some uncertainty over ETS policy in the long term and/or myopia of financial asset managers.

In order to enhance the impact of EU carbon allowance price signal on the economy and to achieve EU-level and national-level GHG reduction targets:

- at the European level, the current discourse associated with EU ETS policy and carbon pricing dynamics should be designed to engage more stakeholders, and directed towards a long-term policy of carbon allowance austerity, characterized by more stringent targets and caps, introduced in a disruptive fashion;

- at the Italian level, while national support to the EU ETS is key, further action is also essential – incentivizing instruments such as subsidies, infrastructures and consultations, would support the EU carbon market in signaling that investing in low-carbon power production companies makes economic sense.

Being a pervasive risk factor, carbon pricing is an incentive to move away from carbon-intensive investments. Nevertheless, we cannot ignore the additional benefits that a broader system of incentives would bring by encouraging low-carbon investments, innovation and development. The study implies that policy makers may prefer a mix of policies to endorse carbon-resilience. The resulting carbon price signal would have the power to significantly and largely impact the value proposition attached to the carbon-content of energy production activities and affect accordingly the expected value of power production companies – thus, also influencing investments of private capitals.