

More competition in green products markets can help save the planet

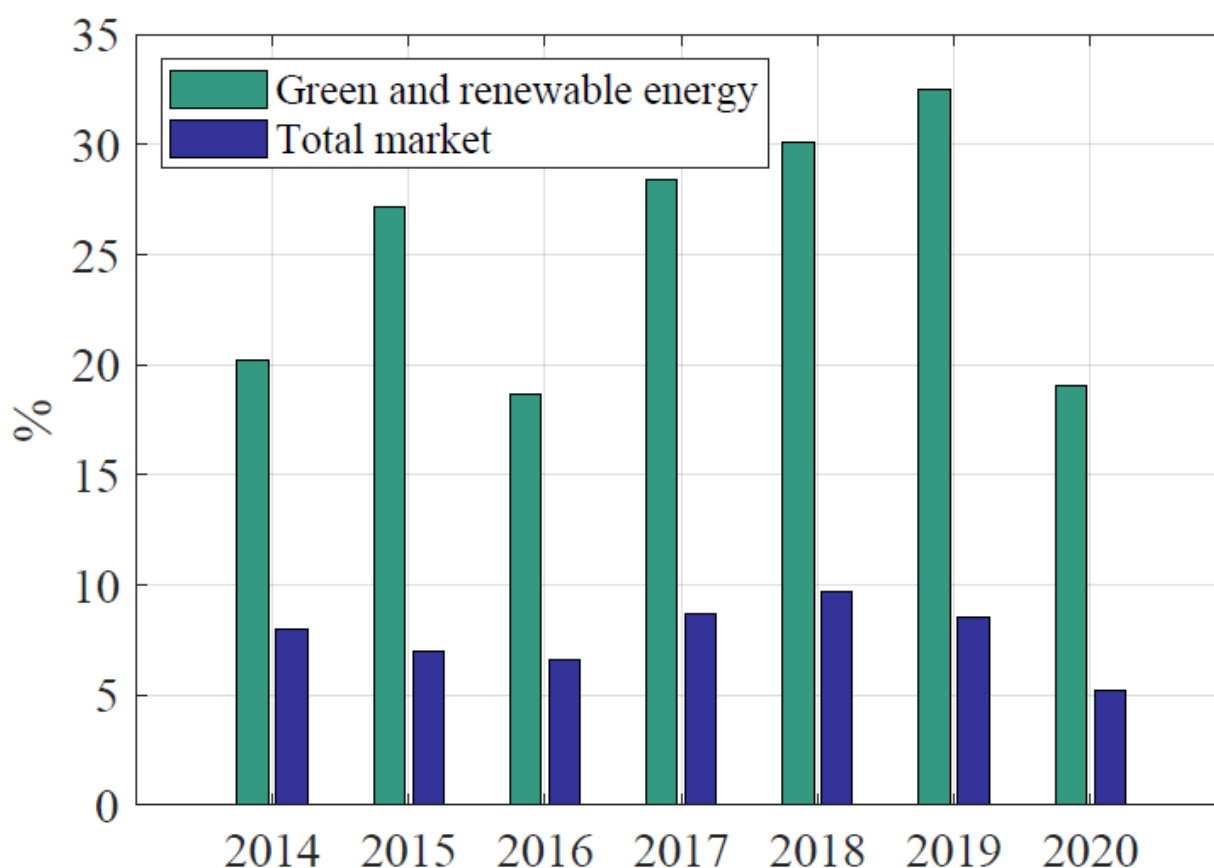
*To reach net-zero emissions, firms will depend on the relative cost of decarbonising their production lines. However, the abatement goods sector – the sector providing climate change mitigation goods – exhibits low competition and thus high prices. **Eric Jondeau, Gregory Leveuge, Jean-Guillaume Sahuc, and Gauthier Vermandel** argue that subsidies financed by a carbon tax are an efficient instrument to promote firm entry in the abatement goods sector, fostering competition and lowering the cost of abating carbon emissions. They estimate that such a subsidy would reduce the cost of the net-zero transition, saving \$2.9 trillion in world GDP each year until 2060.*

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Weak competition as a threat to the net-zero transition

The world's transition to zero-carbon emissions requires a profound change in firms' production lines, with cumulative additional investments estimated at [50 per cent of GDP](#) between 2020 and 2050. To be successful, this supply-side transformation will critically rely on the capacity of the abatement sector to produce goods at a low price. An insufficiently competitive sector will certainly increase transition risks through higher prices for abatement goods, threatening the feasibility of the net-zero transition.

Figure 1. Average markup for firms operating in the abatement sector versus all industries



There is evidence of a market distortion in the abatement sector: several studies have highlighted that production is concentrated in a few global companies, such that [10 per cent among them](#) account for almost 80 per cent of the sector's operating revenue. Calculations based on world financial data, reported in Figure 1, also suggest that over the past seven years, the average markup of abatement goods firms (20 per cent) is nearly three times larger than that of all industrial sectors (7 per cent).

Market concentration with high markups leads to weak competition, something that typically emerges in markets with high barriers to entry. Impediments to entry allow incumbents to enjoy rent opportunities by charging prices above their marginal costs. At the macroeconomic level, the resulting cost of transitioning to net zero is higher, while the incentive to decarbonise industries is reduced.

Potential gains from competition-friendly policies

Given the presence of this market distortion, how can supply-side policies be implemented to reduce transition risk? In [Jondeau et al. \(2022\)](#), we argue that governments can recycle carbon tax revenues to address the competition issue through subsidies to the abatement goods sector. Subsidies are expected to compensate for the cost of reducing carbon and boost firm entry in a fast-expanding sector. We expect that facilitating firm entry will foster competition and pressure incumbents to reduce their margins. Firms would then work towards efficiency gains. They would also develop more environment-related technologies in the long term to shield against prospective entrants.

A macro-climate framework to quantify alternative policy measures

While most of the literature has focused on directed technical change towards carbon-neutral firms ([Acemoglu et al. 2012](#)), the related theoretical literature has to a large extent ignored how market distortion could increase transition costs. In our paper, we address this gap by developing and estimating a dynamic macro-climate model for the world economy. In this new setup, the number of firms as well as barriers to entry characterise the equilibrium price of abatement goods. The underlying framework is well suited to quantify the gain from public subsidies in mitigating climate transition risk by directly tackling the source of the inefficiency.

Macroeconomic gains from public subsidies

What is the consequence of a lack of competition in the abatement sector? In the context of the net-zero transition through 2060, the model quantifies an additional GDP loss up to 2 per cent worldwide on average. This loss emerges from high abatement market prices that hamper firms willing to decarbonise their production lines. As in integrated assessment models, this baseline scenario assumes carbon tax revenues are given to households through lump-sum transfers. While this redistribution is useful to dampen the consequences of carbon tax hikes, it does not address the roots of the inefficiency and leaves some avenues for other policy actions.

An alternative strategy would consist in distributing the carbon tax revenues to firms operating in the abatement sector. As the market structure allows us to distinguish between incumbents and startups, the question at hand is to determine which type of firm should benefit the most from subsidies.

Quantitative simulations demonstrate that pro-incumbent subsidies reduce the marginal cost of abatement goods in the short run and mechanically facilitate the reduction in carbon emissions. However, given the reduction in their relative cost of inputs, incumbents can now attract workers with higher wages at the expense of startups. This mechanism works as an impediment to entry that reduces competition in the medium term. In contrast, startup-oriented subsidies have no impact on the macroeconomic outcome in the short run: firm entry is a gradual process, and it takes time for this subsidy policy to payoff.

Therefore, policymakers must strike a balance in the resource allocation between incumbents and startups. A policymaker seeking to maximise social welfare should thus dedicate 60% of the subsidy to startups, and the remaining share of 40% to incumbents. This policy both reduces incumbents' selling price of abatement goods in the short term and fosters firm entry and competition in the medium term. By addressing the market inefficiency, the optimal subsidy policy saves \$2.9 trillion USD of GDP each year. Competition-friendly policies are also an efficient fiscal tool, as 1\$ of subsidies leads to an additional 2.27\$ of GDP on average between 2020 and 2060.

These findings highlight that policymakers have different policy options at hand to recycle carbon tax revenues. Competition-friendly subsidy policies appear as a promising measure to soften the economic cost of the net-zero transition.



Notes:

- This blog post is based on [Environmental Subsidies to Mitigate Transition Risk](#), Swiss Finance Institute Research Paper No. 22-45, presented at LSE Environment Week (September 2022).
- The post represents the views of its author(s), not the position of the Banque de France, the Eurosystem, LSE Business Review, or the London School of Economics..
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