The Growing Role of Inequality in Environmental Policy

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Inequality is back on the public agenda

Since the financial crisis of 2007-2008, there has been a renewed interest in the high, and often rising levels of income and wealth inequality around the world, and the harm such inequality may do to welfare and social cohesion (Stiglitz, 2012).

Distributional concerns are crucial for successful environmental policy

If a policy, say for a carbon tax, has regressive effects—imposing a larger burden on those with less economic resources—that may not only be undesirable. It can also pose a major obstacle to public acceptance of said policy. In France, the yellow vest protests of 2018-2019 were motivated in part by concerns about the unfair burden of fuel taxes. During Germany's most recent carbon tax deliberations, concern for lower income households, but also for groups such as car commuters, was again a central element (Edenhofer et al., 2019). The perceived fairness of an environmental intervention has a measurable impact on how it is evaluated (Dietz & Atkinson, 2010; Douenne & Fabre, forthcoming).

And so it is welcome that economists are paying more attention to inequality

Economists, including many EAERE members, have been studying inequality for decades. But the topic has drawn particular interest of recent,

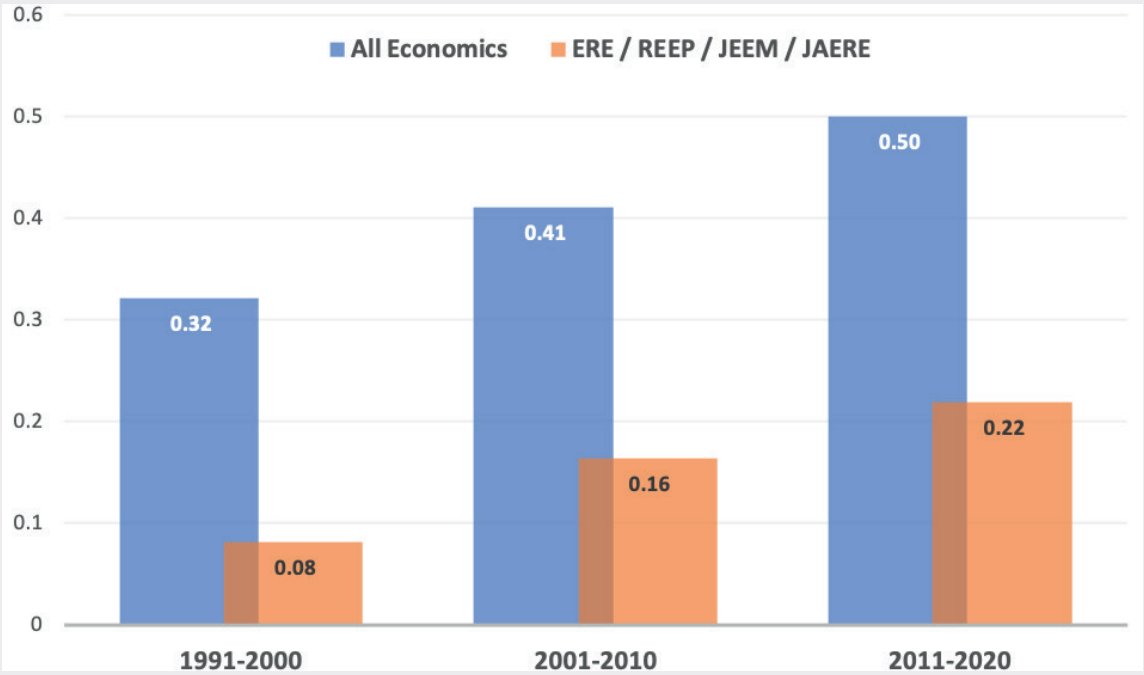

Figure 1. Number of articles on inequality divided by number of articles on efficiency.
Source: Web of Science topic search for "inequality"/"distributional" and "efficiency"/"efficient". ERE: Environmental and Resource Economics, REEP: Review of Environmental Economics and Policy, JEEM: Journal of Environmental Economics and Management, JAERE: Journal of the Association of Environmental and Resource Economists

which we see in our academic journals. Figure 1 shows the average number of economics papers mentioning inequality divided by the number of papers mentioning efficiency. We witness a strong increase in the relative weight of inequality. Between 1991-2000, the ratio was around 0.3—there were on average three papers on inequality for every ten papers on efficiency. This has risen to five in the past decade. We see a similar trend in four journals specialised in environmental and resource economics. Whereas in the 1990s, there was less than one paper on inequality for every ten papers on efficiency, there are now more than two.

The role of inequality in environmental and resource economics is complex

Our current understanding of the inequality-environment nexus may be grouped into four channels. First, the distribution of environmental amenities, natural resources and pollution is often correlated with income and wealth. Second, the degree of economic inequality can itself have effects on environmental outcomes. Third, the costs and benefits of environmental policy are often borne unequally. And finally, fourth, both the distribution of environmental quality and economic inequality change the welfare considerations underlying policy appraisal. There is a substantial literature on each of these four channels. We attempt a systematic overview in a recent review article (Drupp et al., 2021). In what follows, I offer some selective considerations.

Better data continues to improve our understanding of location and scale

Take local air pollution as an example. We know that air quality tends to be worse in low-income and otherwise disadvantaged neighbourhoods (Banzhaf et al., 2019). We also know that this association varies with scale (Hsiang et al., 2019). Across neighbourhoods in a given city, the association between income and pollution is often negative. But compare cities to rural areas, which have both less pollution and lower incomes, and the sign flips. The scale of analysis changes the result and quite possibly the policy implications. Location matters, too. The pattern may look different in Italy from what we find in France or the United States. Much work remains to be done, making use of ever more granular data and exploring new locations.

Distributional effects involve multiple mechanisms

Take carbon pricing as an example. We know that, at least within rich countries, the initial incidence from higher prices may affect consumers with lower incomes more. They spend a higher share of their incomes on energy-intensive necessities such as heating and electricity, resulting in this regressive use-side effect (Grainger & Kolstad, 2010). We also know that revenue recycling, for example through a carbon dividend, can overturn that result (West & Williams, 2004; Klenert et al., 2016). More recently we have learned more about so-called source-side effects—changes to factor incomes and especially jobs. They may well be progressive, falling harder on capital- and emissions-intensive industries (Rausch et al., 2011; Goulder et al., 2019).

Feedback effects matter

Consider again air pollution. We might be tempted to see better air quality in richer neighbourhoods as merely a symptom of economic inequality—richer households pay a premium to breathe better air. But what if pollution exposure leads to lower productivity (He et al., 2019), in turn exacerbating economic inequality? Or what if the rich lobby to preserve the air in their neighbourhoods (Hamilton, 1995)? Similar feedbacks exist in pricing carbon. Carbon dividends may well render the policy progressive. But redistributing income in turn affects consumption. If consumers with lower incomes use the additional income to buy more emissions-intensive goods, think again electricity or heating fuel, redistribution may inadvertently raise emissions, as I find in my thesis (Sager, 2019a). With such feedback effects, focussing on just one direction of the inequality-environment relationship will not suffice.

Context matters

Much of the work on the distributional effects of climate policy has focused on the distribution across income groups within a single, rich

country (Grainger & Kolstad, 2010; Rausch et al., 2011). But we know that there are important differences in distributional dynamics between countries. Energy taxes may be regressive in rich countries, but progressive in some developing ones (Sterner, 2012; Dorband et al., 2019). It is important to evaluate each proposed policy in its' context. We still lack evidence on distributional effects of climate policy in many countries.

There is value to taking a global perspective

Many climate policy efforts are regional, such as the EU Emissions Trading Scheme, or even global, such as the Paris accord. Yet we know that multinational coordination can be hindered if some parties perceive the burden as unfair, or claim so for strategic reasons (Lange et al., 2010; Tavoni et al., 2011; Bretschger, 2013). It can be helpful to take a global perspective. In my thesis, I asked how the cost of carbon pricing is distributed globally—both between countries and across income groups within them. Some of the findings at the national level are reversed at the global scale (Sager, 2019b). Where you live tends to be more important than your position in the income distribution, at least for the initial use-side incidence of carbon pricing. Chinese consumers purchase mainly Chinese goods. And these are produced in more emissions-intensive value chains than the goods purchased by a Swedish consumer. But I also confirm the positive role of carbon dividends at a global scale. The costs net of carbon dividends are strongly pro-poor across the world income distribution, even without international transfers.

We cannot escape normative deliberation

Even when we understand all inequality-environment linkages, we usually need to take normative positions when choosing among policy options. We often do so implicitly, such as when deeming it desirable that one policy has progressive effects and undesirable that another is regressive. But explicit welfare economic analysis is important. In many cases, the initial distribution of environmental quality will matter for the evaluation of marginal damages (Hsiang et al., 2019). And economic inequality may in turn affect the aggregate willingness to pay for environmental quality (Baumgärtner et al., 2017). Considering again climate change, income inequality within countries may even alter the social cost of carbon (Kornek et al., 2019).

While we already know a lot, there is still much to learn

It is heartening to see the growing interest in the interplay between economic inequality and environmental policy shown in Figure 1. But there is another reading of Figure 1, namely that there is still a significantly larger share of papers on inequality in the Economics discipline as a whole than there is in our community of environmental and resource economists. There certainly is room for more work in this domain.

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