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Economics for Inclusive Prosperity

In Defense of Alternatives to Pollution Pricing

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2020 marks the 100th anniversary of the publication of economist Arthur Cecil Pigou's *The Economics of Welfare*. This book is widely recognized as introducing the concept of Pigouvian welfare economics, that is, of using the basic tools of neoclassical economics to study how to improve the functioning of the economy and people's lives. While Pigou's analysis touched on many topics in the economy, the part of Pigouvian welfare economics most remembered today by environmental economists (and perhaps by anyone who has taken an introductory microeconomics course) is his theory of externalities. Pigou argued that externalities, like pollution or congestion, create market failures, but that they can be cost-effectively remedied using taxes or subsidies. These price policies have come to be known as Pigouvian pricing, or Pigouvian taxes or subsidies.

If there is one common lesson argued by most environmental economists today regarding the design of environmental policy, it is: the best way to correct the market failure caused by pollution is Pigouvian pricing. According to this argument, a price should be levied on pollution equal to the value of the damages it causes to society. The price can be directly applied via a pollution tax, or indirectly via a cap-and-trade system where the permit price becomes the Pigouvian price on pollution. If the price is correct, then the most efficient outcome will be realized, and it will be achieved at the lowest possible cost to society. A corollary is that environmental policies other than price policies, for example technology mandates or performance standards (what economists often call "command-and-control" policies), are inferior and should not be used.

This standard economic justification of pollution pricing is exemplified by the "Economists' Statement on Carbon Dividends," an open appeal drafted by the Climate Leadership Council and signed by more than 3,500 economists (this author included). This letter argues for a tax on carbon dioxide, the pollutant most responsible for climate change. "A carbon tax offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. By correcting a well-known market failure, a carbon tax will send a powerful price signal that harnesses the invisible hand of the marketplace to steer economic actors towards a low-carbon future." (Economists' Statement on Carbon Dividends 2020). The argument is also nicely summarized in David Klenert and Linus Mattauch's Economists for Inclusive Prosperity policy brief on carbon pricing: "The intuition behind pricing greenhouse gas emissions is straightforward: since the real cost to society is not reflected in market prices, emissions are too cheap and too much greenhouse gas is emitted. Setting a price on emissions that corrects for this increases the price of carbon-intensive production and carbon-intensive consumption goods." (Klenert and Mattauch 2019).

The 100-year-old Pigouvian justification for pollution pricing is compelling. But, there are other compelling issues in the real world that complicate Pigou's straightforward and intuitive justification. In this policy brief, I argue that these other issues provide strong justification for pursuing policies other than pollution pricing. This does not mean that pollution pricing is bad or that we should discontinue it where it exists and is working. Rather, non-price policies, which economists often argue against, should be pursued as well, and may in fact be preferable to pricing. I begin by briefly summarizing the standard justification for pollution pricing in the next section. Then, I describe three sets of issues that weaken the case for price-based policies. First, political constraints make efficient pollution pricing difficult to implement, at least in the near term. Second, caring about equity or distributional outcomes may lead one to prefer alternatives to price-based policies. Third, other characteristics of the world, including other market failures and behavioral anomalies, can make alternative policies more efficient than pollution pricing. Because of these concerns, non-price-based policies, like command-and-control performance standards or technology mandates, are more appropriate. These policies ought to be considered alongside price-based policies, and perhaps even ought to be preferred to price-based policies.

The Standard Justification for Pollution Pricing

Pollution is a textbook example (literally) of a negative externality – a cost to society of an economic exchange that neither the buyer nor the seller takes into account. An unregulated market for a good or service with a negative externality attached to it will result in an over-supply of that good or service relative to the efficient level.

The solution offered by Pigou is intuitive: because the costs of the negative externality are not borne by participants in the market, make them bear those costs by putting a price on the externality. This intuition explains why pricing of externalities is often called "internalizing" the externality.[1] Pigou's analysis is not primarily about pollution; pollution is just one example of a negative externality. He discusses at length other sources for the divergence of private and social incentives, including tenancy issues that give rise to principal-agent-type problems. Only in one sentence does he directly address problems of pollution.[2]

The standard justification of pollution pricing is pervasive throughout much of the policy writing done by environmental economists. The Environmental Protection Agency has a website that expounds the benefits of pollution pricing over command-and-control policies (EPA 2020). Alternative policies like command-and-control standards or mandates are often argued against, because they fail to live up to the ideal of the externality tax.

The advantage of pricing is more limited in scope than is sometimes acknowledged. An important distinction arises between efficiency and cost-effectiveness. The theory claims that a price will yield the efficient level of the negative externality, where the total economic well-being of society is maximized, only when the price equals the marginal external damages so that those negative externalities are fully internalized.[3] If the tax is not set at the efficient level, then the efficient level of pollution will not be realized. However, even without achieving the efficient level of pollution, a price on pollution will theoretically achieve a given level of pollution at its lowest possible cost. This is called cost-effectiveness. According to theory, achieving 1 million tons of reduction in carbon through a command-and-control policy like a technology mandate will be costlier than achieving the same 1 million tons of reduction through a carbon price.[4]

Cost-effectiveness and efficiency are important goals, but they are not the only goals that environmental policy should seek to attain. Another important goal is equity, or fairness in the distribution of the costs and benefits of policy (Field and Field 2017). A large literature studies equity issues in environmental policy, a topic often called "environmental justice" (Banzhaf et al. 2019). As I argue below, some command-and-control policies dominate pricing policies on equity grounds.

Another goal of policy is implementability. The theoretically ideal policy is unhelpful if in practice it is impossible to pass or to enforce. A key feature inhibiting the implementability of pollution pricing is the presence of political economy constraints. Pollution pricing, especially pollution taxation, is very unpopular. Command-and-control policies are less unpopular.

Political Economy Justifications for Alternatives to Pollution Pricing

Command-and-control pollution policies have been successfully reducing emissions for decades throughout the world. By contrast, policies that put a price on carbon or other pollutants are rarer and very unpopular, throughout the world and across the political spectrum. Perhaps the most prominent exemplar of their unpopularity lies in the French protest movement known as the yellow vests (mouvement des gilets jaunes). While the causes of the protest movement are varied, the initial spark behind the movement was French President Emmanuel Macron's announcement on 1 January 2018 of a tax on motor fuels to reduce carbon emissions (Cigainero 2018). This opposition to carbon pricing exists despite general support among the French population of measures to battle climate change (Douenne and Fabre 2020), in the country that birthed the Paris Agreement in 2016.

Likewise, in the United States, though climate change is increasingly seen as a threat, support of carbon pricing is quite low. A 2019 poll of US residents conducted by the Washington Post and the Kaiser Family Foundation found that, while a larger percentage of Americans see climate change as a crisis that must be addressed, support for policies that would increase energy costs is low. For example, 76% of respondents said that climate change is a "crisis" or a "major problem," and 85% said that addressing climate change will require Americans to make major or minor sacrifices, but only 25% support increasing the federal gas tax by 25 cents per gallon, and only 27% support a $10 per month increase in home electricity bills. Americans show more support for command-and-control policies: 66% oppose President Trump's plan to roll back automobile fuel economy standards (Dennis et al. 2019).

The lack of public support in the United States is reflected at the ballot box. Proposals to enact carbon taxes have never passed in the United States. Washington State has had two ballot initiatives to enact a carbon tax. In 2016, Initiative 732 was placed on the November election ballot after garnering 350,000 signatures in support. It would have phased in a carbon tax, starting at $15 per metric ton, and in turn reduced the sales tax rate by 1%, reduced taxes on manufacturing firms, and expanded the state's earned income tax credit. It was opposed by environmental organizations including the Sierra Club and was defeated at the polls 59.3% to 40.7%. Two years later, Initiative 1631 was placed on the ballot. It too would introduce a carbon tax starting at $15 per ton, but it would have used the carbon tax revenues to invest in projects aimed at reducing pollution. Though it garnered more establishment support from the likes of the Sierra Club, it too failed, 56.6% to 43.4%. Anderson et al. (2019) study the determinants of the votes on these two initiatives and find that political ideology is the major driver.

This lack of political support for pricing carbon is a real constraint that should be considered in economic models. Some economists may argue that political economy considerations are not the domain of economists, but rather of political scientists or others. However, political constraints are constraints, and economists solve constrained optimization problems. It is just as inappropriate to rule out considering political constraints as it is to rule out constraints based on technology or abatement costs. Just like technological constraints, political constraints are constraints on the set of instruments that are possible.

The argument for non-price-based policies justified by political constraints is hinted at in a recent essay by Lawrence Goulder (Goulder 2020). Goulder argues that the urgent need for climate policy soon is of such vital importance that the potential for near-term implementation needs to be part of any assessment of price-based policies. Alternative policies "that economists might otherwise tend to dismiss" (p. 144), like a command-and-control Clean Energy Standard (CES), could potentially dominate price policies if they have sufficiently greater likelihood of being passed in the near term. On what Goulder calls a "narrower, conventional" (p. 153) cost-effectiveness analysis, the CES is dominated by a carbon tax. But when the prospect of near-term implementation is also considered, the CES could dominate a tax.

Another argument for non-price-based climate policies based on political economy grounds comes from Joseph Stiglitz (Stiglitz 2019).[5] Stiglitz argues that time-consistency problems with carbon pricing and technology innovation policy create unique political constraints. For example, an initially-announced high price path may not be credible, since the endogenous technological change induced by the policy will reduce the social cost of carbon and thus reduce support for the high price path (Helm et al. 2003). Furthermore, Stiglitz (2019) argues that policies can affect coalition forming and thus agents' future interests.

Jenkins (2014) discusses several political economy constraints that affect carbon pricing. Jenkins argues that the presence of these constraints can be analyzed in a traditional second-best setting, where the first-best carbon tax is unattainable or costly. The constraints identified include low willingness-to-pay of citizens, opposition by producers where costs will be concentrated, and principal-agent problems. Given these and other constraints, it is likely that if carbon pricing is passed, the level of the tax will be lower than the efficient level. This creates a significant opportunity for improvement. A non-price policy might offer efficiency gains even if it's not efficiency-maximizing.

Of course, proponents of carbon pricing are aware of political economy constraints and have carefully considered how the design of carbon pricing policies affects their possibility of being implemented (Baranzini et al. 2017). Several studies show through surveys or choice experiments that the use of the carbon tax revenue has an impact on support for a tax; when revenues are used to fund mitigation projects the tax receives the highest support (Carattini et al. 2017, Carattini et al. 2019). Klenert and Mattauch (2019) cite public support as a crucial factor in designing an effective carbon tax. Their proposition for encouraging public support is to emphasize the use of the tax revenues and how it can offset the distributional burden of the price increases. (I address these distributional burdens in the next section.) Carbon tax proponents will also argue that support for carbon pricing is growing; it is implemented in 60 jurisdictions covering 20% of world emissions (World Bank 2019). Political economy considerations should certainly play a part in designing a carbon price, but I also contend that they are serious enough to lead us to consider alternatives to carbon pricing.

Equity Justifications for Alternatives to Pollution Pricing

Barring political economy constraints, carbon pricing is likely more cost-effective than non-price policies. However, the distribution of costs and benefits under the two types of policies will differ. It may be the case that the distributional outcomes are more equitable under a non-price policy than they are under price policies. The evidence here is decidedly mixed, with some studies finding price-based policies to be more progressive than non-price-based policies, and some finding the opposite.

One theoretical advantage of price-based policies is that they can raise revenue. A carbon tax generates tax revenues, and a cap-and-trade program in which at least some of the permits are auctioned or sold rather than freely distributed also generates revenues. These revenues can then be used to affect the net distributional burden of the policy. For example, if the revenues are returned in a lump-sum fashion, this revenue return will be highly progressive. Even if the impact of the price itself is regressive, the progressive revenue return could offset that impact. West and Williams (2004) simulate the effects of a $1 per gallon gasoline tax increase across income quintiles in the United States. Without considering the return of revenues, the tax increase is regressive, with a Suits index (a measure of incidence, where a negative value indicates regressivity and a positive value indicates progressivity) ranging from –0.31% to –0.44%. If instead the revenue is returned through lump-sum rebates, the outcome is progressive, with a Suits index ranging from 0.11% to 0.25%. However, Fullerton and Monti (2013) develop a general equilibrium model with two labor skill types and show that even after returning all pollution tax revenues to low-skill workers through low-skill labor tax cuts, the pollution tax still disproportionately burdens them.

Non-price policies like command-and-control mandates or standards do not create revenues; instead they create scarcity rents which generally will be captured by regulated producers (Fullerton and Metcalf 2001). Indeed, lump-sum return of revenue is a key component behind the proposal in the Economists' Statement on Carbon Dividends; the "carbon dividends" refer to the lump-sum return of the carbon tax revenues.[6]

But is this theoretical equity advantage of revenue-raising price policies ever manifested in real-world policies? In truth, there are relatively few examples real-world pollution price policies that recycle revenues in a way that aims to achieve more equitable outcomes. Klenert et al. (2018) examine five real-world carbon taxes and report the uses of the tax revenues. Only a minority of the revenues are recycled to households. Most of the revenues are returned to firms, through tax cuts or transfers, or to general funds or green spending. Carl and Fedor (2016) report that 70% of cap-and-trade program revenues are used on green spending, rather than for achieving distributional goals.

The story of Washington State's proposed carbon tax illuminates the difficulty of using revenue recycling to achieve distributional goals. The first proposal, in 2016, included a cut in the sales tax and an increase in the earned income tax credit, which primary benefit low-income households. Because it did not include green spending, it was opposed by many environmental groups including the Sierra Club. In response to this opposition, the second proposal, in 2018, included more green spending and less equity-targeting revenue return. It too failed. The two goals of equity and political attainability are not necessarily both served through the same instruments of policy design.

It may be difficult to design pricing policies to return revenue to offset regressive costs, but that does not necessarily imply that carbon price policies are more regressive than non-price policies. It may be the case that non-price policies are more regressive than price policies, or that price policies are more progressive than non-price policies, even without consideration of revenue return. What does the evidence say? Of course, the answer is "it depends;" different types of price and non-price policies will have different distributional outcomes.

Pizer and Sexton (2019) summarize the literature on the distributional impacts of energy taxes. They conclude that, while these taxes are commonly assumed to be regressive, more recent literature shows that this is not always the case. In fact, the direct incidence (ignoring the uses of the revenue) differs across type of tax and location. For instance, Pizer and Sexton (2019) report that in the United States energy consumption is a higher fraction of total spending for the lowest expenditure decile (15% of spending) than it is for the highest expenditure decile (5% of spending), suggesting that a price policy increasing the costs of all energy for all consumers will be regressive. But, this pattern does not hold for all types of energy; the consumption pattern across expenditure deciles of motor fuels is basically flat. In other countries the pattern differs too. Generally, carbon taxation may be progressive overall in poorer countries (Dorband et al. 2019). There are also issues of horizontal equity in the burden of energy taxes; Rausch et al. (2011) find a large variation in the burden of these taxes within income groups, especially within the poorest groups.

The total distributional burden includes not just the "uses-side" effects of prices of good like gasoline and electricity, but also "sources-side" effects on the prices of inputs like labor and capital. Some studies attempt to measure both sets of effects and generally find that the sources-side effects are progressive and may even fully offset regressive uses-side effects (Goulder et al. 2019, Rausch et al. 2011).

Two recent studies demonstrate the importance of considering labor market effects in distributional outcomes. Hafstead and Williams (2018) study the unemployment effects of environmental policies using a general equilibrium model with labor market search-and-matching frictions. They simulate the effects of a carbon tax and a command-and-control performance standard. While the carbon tax is more efficient, the performance standard yields a smaller shift in employment, both in job losses in the polluting industries and job gains in other industries. Given the distributional costs of these labor market transitions and unemployment, they conclude that the performance standard may be more attractive to policy makers on equity grounds despite its relative inefficiency.

Aubert and Chiroleu-Assouline (2019) also examine distributional issues related to unemployment effects of environmental policy, using a labor market search-and-matching model to generate unemployment. Their model features both high- and low-skill labor. They identify conditions where there is a trade-off between efficiency and equity; a pollution tax that reduces deadweight loss is regressive. But they also find conditions where this trade-off does not exist, for instance when low-skill employment is more responsive than high-skill employment.

Davis and Knittel (2019) estimate the incidence of automobile fuel economy standards in the United States and find that, for the new car market, they are actually progressive overall. This is mainly because richer households are more likely to buy new cars. After including the used car market, the standards become mildly regressive. Levinson (2019) compares fuel economy standards to a gasoline tax. He simulates a fuel economy standard through a tax on low fuel economy (equivalent to a subsidy to high mpg). For a given level of revenue raised (though not necessarily for a given reduction in gasoline consumption), he finds that the gas tax is more regressive than the fuel economy subsidy.

Bruegge et al. (2019) study the distributional effects of building energy code regulations, a commonly employed command-and-control energy policy. The energy savings from these regulations tend to be greater for low-income households, which is a progressive distributive outcome. However, the regulations are also found to distort home attributes at a higher rate for low-income households, notably by reducing the square footage and the number of bedrooms. This is a regressive distributive outcome.

In summary, the distributional rationale for price policies or non-price policies is unclear. In theory, an advantage of price policies is the revenue they generate, which can be used to achieve distributional goals. In practice, such use of revenue return is rare and may be politically difficult to enact, especially in places where support for redistributive policies in general is low. Even if revenue recycling is distributionally neutral, the difference in the incidence between price policies and non-price policies is ambiguous; in some cases a price policy is more regressive than an equivalent non-price policy, and in some cases vice versa. Nevertheless, the consideration of distributional or equity goals in policy optimization may provide support for pursuing non-price-based policies.

Efficiency-Based Justifications for Alternatives to Pollution Pricing

The standard argument for pollution pricing assumes that the pollution externality is the only market failure. When there are multiple market failures the argument is more complicated. The theory of the second best (Lipsey and Lancaster 1956) tells us that, in the presence of multiple market failures, a policy that targets only one market failure does not necessarily increase efficiency. In the real world, pollution externalities exist alongside other market failures, like knowledge spillovers (Stiglitz 2019, Jaffe et al. 2005) and imperfect competition (Kennedy 1994). A price on pollution, with no other policy to address the other market failure(s), does not necessarily dominate non-price policies.

Command-and-control non-price policies may dominate price policies under incomplete regulation. As argued by Holland (2012), incomplete regulation can result in leakage, where emissions reductions from the regulated sector or economy are partially or totally offset by emissions increases in unregulated places. With the possibility of leakage, a non-price intensity standard can dominate a price because the implicit output subsidy in the intensity standard prevents or reduces leakage.

Another efficiency-based justification for intensity standards over pollution prices is based on business cycle volatility. Fischer and Springborn (2011) develop a real business cycle general equilibrium model that includes pollution. They compare an emissions tax, cap-and-trade, and an intensity standard, and they show in their preferred calibration that the intensity standard dominates. The standard yields higher levels of output and labor and lower costs than a tax with equivalent emissions reductions, because the standard allows the economy to more efficiently adjust to the changing conditions brought about by the productivity shock.

Barrage (2020) provides another dynamic model of optimal pollution policy, extending the DICE integrated assessment model to include pre-existing distortionary taxes on labor, capital, and output. Though Barrage's (2020) model does not consider non-price policies, it shows that the presence of other pre-existing policies like capital and labor taxes alters the efficient carbon price; it is no longer equal to the Pigouvian level of marginal external damages. This research shows that other efficiency considerations affect the optimal pollution price, which suggests that these considerations may also affect the ranking between price and non-price policies.

A final set of efficiency justifications for non-price policies comes from behavioral economics. The standard neoclassical argument for pollution pricing assumes that all agents rationally respond to incentives. Growing evidence from behavioral economics suggests that people often do not respond to incentives according to the predictions of rational choice theory. If so, this calls into question the efficiency advantage of price over non-price pollution policy.

This is precisely what is found in several research papers. Tsvetanov and Segerson (2013) provide a behavioral model featuring temptation and self-control, based on Gul and Pesendorfer (2001). They find that Pigouvian taxes do not maximize efficiency in this environment. In fact, a policy that combines a price on pollution with a command-and-control standard can yield higher efficiency than a pollution price alone, depending on the parameters.

Fischer et al. (2007) ask whether automobile fuel economy standards, a command-and-control non-price policy, should be tightened based on efficiency grounds, in a model where consumers may undervalue fuel costs. Their main result is that either conclusion could be reached depending on the model's specifications and parameters, so there are cases where tightening the non-price policy increases efficiency. Sallee (2014) provides evidence that consumers exhibit "rational inattention" to fuel economy when purchasing cars. This behavioral phenomenon likely affects the cost-effectiveness of price policies, though Sallee's paper does not consider policy analysis. Li et al. (2014) show that consumers respond differently to a change in the gasoline tax rate than they do to other changes in gasoline price.

This small literature relating behavioral economics to environmental policy, along with other papers that study pollution externalities alongside other distortions or market failures, provide justification for non-price-based policies dominating price-based policies on efficiency grounds alone, without appealing to political economy or equity concerns.

Conclusion

The standard neoclassical argument in favor of price-based policies to address externalities like pollution is convincing, in theory. In a perfect world (or at least a world in which the only imperfection is pollution), establishing a carbon price through a tax or a cap-and-trade system is the preferred way to address climate change; it will reduce emissions at the lowest possible cost. If the price is right, it will achieve the efficient level of pollution reductions.

But the real world is complicated. Political economy constraints make pollution pricing difficult to enact at socially efficient levels, at least in the near term. Distributional outcomes from pollution pricing may be regressive. Other market failures or behavioral anomalies can make pollution pricing inefficient. All of these reasons weaken the standard argument that price-based policies dominate non-price-based policies.

Admittedly, proponents of pollution pricing are aware of these limitations and advocate designing price-based policies with these limitations in mind. However, I contend that the limitations of carbon pricing, though surmountable, are dire, and thus they provide a strong justification for supporting alternatives to price policies, like command-and-control performance standards and technology mandates.

In fact, the history of environmental policy in the United States is more or less a history of successful command-and-control policies. Flagship laws like the Clean Air Act and the Clean Water Act are predominantly composed of non-price regulations, which have created large net benefits for society (EPA 2011). The command-and-control corporate average fuel economy (CAFE) standards that apply to new cars have effectively reduced tailpipe pollution (National Research Council 2002). None of these policies is perfect, but they have been enacted, and they have helped the environment.

Going forward, non-price policies like a federal Clean Energy Standard are likely to continue the tradition of successful command-and-control environmental policies (Goulder 2020, Goulder et al. 2016). The Obama administration's proposed Clean Power Plan, if enacted, would have reduced carbon emissions through a combination of price and non-price policies (Fowlie et al. 2014). The replacement for the Clean Power Plan will likely feature a similar combination.

Environmental economists and other advocates for environmental policy should continue to argue in favor of pollution pricing policies and work to design such policies to increase their effectiveness. But in doing so we should not rule out alternatives to price-based policies like command-and-control mandates. These non-price-based policies may in fact have advantages over price-based policies when it comes to equity considerations or political feasibility. To solve climate change and other environmental crises, the optimal solution will consist of a multiplicity of tools and not a silver bullet.

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Endnotes

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1 As Pigou writes: "When there is a divergence between these two sorts of marginal net products, self-interest will not, therefore, tend to make the national dividend a maximum; and, consequently, certain specific acts of interference with normal economic processes may be expected, not to diminish, but to increase the dividend." (Pigou 1920, Part II, Chapter IX) By "divergence between these two sorts of marginal net products," Pigou means externalities, which make private and social incentives diverge. (Pigou never uses the term "externality" in the book.) By "the national dividend," Pigou means what we now call economic efficiency.

2 "It [the presence of externalities] is true of resources devoted to the prevention of smoke from factory chimneys: for this smoke in large towns inflicts a heavy uncharged loss on the community, in injury to buildings and vegetables, expenses for washing clothes and cleaning rooms, expenses for the provision of extra artificial light, and in many other ways." (Pigou 1920, Part II, Chapter IX).

3 A microeconomics principles textbook states that pollution pricing "forces the firm to internalize the externality, meaning that the firm must take into account the external costs (or benefits) to society that occur as a result of its actions." (Mateer and Coppock 2018, p. 219).

4 An undergraduate environmental economics textbook describes this result: "As long as the control authority imposes the same emissions charge [price] on all sources, the resulting incentives are automatically compatible with minimizing the costs of achieving that level of control." (Tietenberg and Lewis 2018, p. 343).

5 Stiglitz incidentally is the only one of 16 living former chairs of the presidential Council of Economic Advisers who did not sign the Economists' Statement on Carbon Dividends (Mufson 2020).

6 Part of the statement reads: "To maximize the fairness and political viability of a rising carbon tax, all the revenue should be returned directly to U.S. citizens through equal lump-sum rebates. The majority of American families, including the most vulnerable, will benefit financially by receiving more in 'carbon dividends' than they pay in increased energy prices." (Economists' Statement on Carbon Dividends 2020)

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