The (indirect) Effects of Windfall Funds on Sustainability Behavior: Insights for Carbon Fee Dividends

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1. Motivations underlying the research

Addressing global climate change continues to challenge decision-makers and citizens alike. In the United States, legislation involving a carbon tax and dividend is increasingly discussed to help move away from the heavy reliance on carbon-based fuels and encourage investment in energy innovations that meet energy demands. The purpose of the dividend would be to reallocate collected fees to American residents who may spend it as they choose. Analysis suggests that many households (60%+) will receive a larger dividend payment than their increased energy cost from the tax. However, whether the reallocation and spending of such funds would support or detract from efforts to pivot away from carbon fuels and towards energy conservation and/or innovation remains unknown.

A growing body of work indicates that people act quite differently depending on how money, including policy incentives such as the proposed reallocation of fees in the Carbon Dividend Trust Fund, has become entrusted to them. Of particular importance to the current study is whether all types of windfall are perceived, and acted upon, equally. Specifically, if the government (in the form of the Carbon Dividend Trust) is taxing carbon (or carbon-equivalent) emissions to encourage lower individual use, will people change their behavior and limit or expand their own conservation efforts because the government is involved? Our paper is motivated by this open question and broader inquiries from the literature regarding behavior from windfall funds and linked sustainability behaviors.

This article contributes three ways to the literature on windfall effects and behavioral spillover. First, we examine whether the source of windfall funding (a subsidy, tax refund, or no information on the source) impacts an individual's stated future sustainability behavior. Second, we investigate if a threshold windfall amount must exist before we see changes in stated sustainable behavior. Third, we explicitly examine heterogeneity in response to windfall funding. Moreover, this study was designed to directly investigate important policy questions surrounding legislation like the Carbon Dividend Act. Our results show that the source of money substantially influences behavior and must be carefully considered when analyzing policy that intends to reallocate funds for citizens to spend as they see fit. Importantly, our paper serves as a reminder that there is a lot we don't know about the indirect impacts of a carbon fee and dividend approach and provides insight into various avenues for future research.

2. A short account of the research performed

Our paper uses a nationwide survey conducted in September 2018 to measure whether information on the source or amount of windfall impacts an individual's intent to engage in sustainable behaviors.

The survey was designed so that each participant was randomly placed into one of three treatments regarding potential additional compensation for participation (subsidy, tax refund, neutral wording) and the source of these extra funds from parties related to energy efficiency and conservation in transportation and home energy. Each participant was asked an open-ended qualitative question about how they planned to use additional compensation, along with Likert-style questions to measure their future sustainable behavior intentions related to energy efficiency and conservation, environmental motivation, perceptions of climate change, and socio-demographics. We received 1,217 survey responses from

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United States residents over the age of 18. Given the bounded nature of our Likert scale data, we ran several Tobit regression analyses with a consistent set of control variables.

3. Main conclusions and policy implications of the work

Our results provide evidence that information on the funding source for unexpected compensation causes people to increase their stated desire to participate in transportation-related sustainable behavior. The tax refund treatment, in particular, led to consistently positive spillover effects. This result suggests that a carbon fee and dividend may result in a lower bound of GHG emissions reductions because current reports do not account for the indirect behavioral effects of the dividend. Our results also introduce the idea that a minimum threshold triggers a windfall response. This result would suggest that over time, as the dividend decreases (as jurisdictions move away from carbon-emitting technologies), we may see a reduction in the positive spillover or no additional behavioral effect. As a result, we hypothesize that the additional indirect decrease in emissions is likely the largest early in the lifespan of the policy when the refund is high. Importantly, our analysis reveals that pro-environmental behaviors are not treated equally and that the source of windfall payments can influence these behavioral outcomes. Future research will also benefit from a better understanding of how dividend-adjacent policies, such as using tax revenues to lower corporate and income tax rates, which indirectly act like a windfall, impact behaviors. Implementing a carbon tax has many moving pieces, and this study provides additional insight into the full accounting of its possible consequences.