Data Visualization

Do Carbon Prices Limit Economic Growth?

Daniel Driscoll

Abstract
The most common counterargument to taxing carbon emissions is that the policy has a negative impact on economic growth. The author tests the validity of this argument by visualizing the enactment of carbon prices on gross domestic product per capita from 1979 to 2018 and presenting a formal fixed-effects regression analysis of panel data. No connection is found between carbon price implementation and diminished economic growth. This outcome is primarily due to policy design and the general nature of economic growth. The author concludes that this counterargument to enacting carbon prices exists only because of misunderstandings of economic growth and ideology.

Keywords
visualization, carbon prices, economic growth

Capitalism and markets prioritize profit over everything else. Unregulated capitalism, for instance, often leads to wealth inequality. This is why progressive taxation policies are often recommended to redistribute wealth that would otherwise become concentrated at the top, contributing to socioeconomic insecurity (Piketty 2019). Although redistributive policies have been subject to criticism with respect to their impact on economic growth, scholarship has disproved claims that egalitarian policies harm economic growth (Kenworthy 2004).

Unregulated capitalism also leads to an increase in carbon emissions, augmenting the harmful impacts of global climate change. As carbon prices attempt to incorporate the cost of carbon emissions into the market, they are the most commonly cited policy instrument for combating global climate change. However, the most common counterargument to implementing carbon prices is that taxing carbon emissions will have a negative impact on economic growth. The current U.S. president, Donald Trump, claims that combatting global climate change is “expensive” (Schulman 2018). Historically, he is not alone. Many governments have not seriously considered carbon prices, because of similar concerns regarding economic costs. This begs the question: have existing carbon prices limited economic growth?

To answer this question, I have used data on gross domestic product per capita from the Organisation for Economic Co-operation and Development. For comparability, the data are inflation adjusted and measured at 2010 purchasing power parity. The data set includes 20 wealthy democracies, 11 of which have carbon prices. I begin in 1979 (the business cycle peak year for many of these countries) and end in 2018. For each country with a carbon price, I have marked the year of policy implementation with a point on its timeline. To aid visualization, countries are split into four categories: Nordic countries, liberal countries, Mediterranean countries, and continental countries (plus Japan), a common typology in the field of comparative political economy (Huber, Huo, and Stephens 2017).

Figure 1 allows two types of comparison: first, a comparison within countries of economic growth before and after carbon prices were adopted, and second, comparisons between similar countries that have and have not adopted carbon prices over time. Within countries there is little evidence of a relationship between carbon price adoption and diminished economic growth. If anything, countries continue to enjoy steady economic growth after adoption. After implementing carbon prices in the early 1990s, Nordic countries, which tax carbon at the highest rates, enjoyed significant economic growth for more than a decade (note that Sweden and Finland experienced a
slight downturn in the early 1990s before sustaining substantial growth). The other countries that implemented carbon prices in the 2000s and 2010s also show an unaffected, steady rise in economic growth over time. Between countries, the evidence is the same. Countries with and without carbon prices have comparable, parallel economic growth trends. In short, the figure shows no connection between the implementation of a carbon price and diminished economic growth. I confirm this relationship by conducting a formal, fixed-effects regression analysis of panel data included in the supplement. The presence of a carbon price is not significant and has no effect on economic growth.

Why do carbon prices have no impact on economic growth? There are two main explanations: (1) policy design and (2) the general nature of economic growth. First, policy makers design carbon prices so that they are unlikely to harm economic growth. For better or worse, carbon prices always contain exemptions for specific industries (Organisation for Economic Co-operation and Development 2018), and carbon is priced at rates much lower than that recommended by climate economists. Second, sources of economic growth are complex and surprisingly little understood. There is not one but a variety of models for understanding different paths to economic growth (Baccaro and Pontusson 2016). Therefore, linking the taxation of carbon emissions to diminished economic growth is an oversimplification that is likely a result of ideology and fossil fuel industry lobbying (McCright and Dunlap 2010).

Because existing carbon prices do not harm economic growth, there should be little trepidation in enacting them. Rather than making blanket claims and judgements about carbon prices, a better strategy would be to investigate
differences among enacted policies to inform future policy-making decisions.

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References

Baccaro, Lucio, and Jonas Pontusson. 2016. “Rethinking Comparative Political Economy: The Growth Model Perspective.” Politics & Society 44(2):175–207.

Huber, Evelyne, Jingjing Huo, and John D. Stephens. 2017. “Power, Policy, and Top Income Shares.” Socio-Economic Review 17(2):231–53.

Kenworthy, Lane. 2004. Egalitarian Capitalism: Jobs, Incomes, and Growth in Affluent Countries. New York: Russell Sage.

McCright, Aaron M., and Riley E. Dunlap. 2010. “Anti-reflexivity.” Theory, Culture & Society 27(2–3):100–33.

Organisation for Economic Co-operation and Development. 2018. Effective Carbon Rates 2018. Geneva, Switzerland: Organisation for Economic Co-operation and Development.

Piketty, Thomas. 2019. Capital et Idéologie. Paris: Le Seuil.

Schulman, Jeremy. 2018. “Every Insane Thing Donald Trump Has Said about Global Warming.” Mother Jones. Retrieved December 18, 2019. https://www.motherjones.com/environment/2016/12/trump-climate-timeline/.

Author Biography

Daniel Driscoll is a PhD candidate in sociology at the University of California, San Diego. Several key questions motivate his research: Why do some people, institutions, and states fight for the environment, while others do not? And what explains how, in some places but not others, movements and policies emerge in response to global climate change? He uses diverse research methods, from qualitative interviews and ethnography to statistical and comparative historical methods.