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Report

Why the US should establish a carbon price either through reconciliation or other legislation

Sanjay Patnaik and Kelly Kennedy, Thursday, October 7, 2021

Introduction

From the start of his term, President Biden has indicated that he wishes to pursue an ambitious climate agenda. On his first day in office, he recommitted the U.S. to the Paris Climate Agreement and ordered agencies to review a slew of climate-related (de-)regulations enacted by the Trump administration. One week later, he signed the Executive Order on Tackling the Climate Crisis, which outlined a “whole-of-government” approach to mitigating and responding to climate change. And in April, he announced a new target for U.S. emissions reductions: to halve emissions from 2005 levels by 2030.

Now, President Biden and Democrats in Congress have to find a way to meet these goals. Democrats are in the midst of negotiations over what could be a very impactful climate bill. As part of the budget reconciliation process, Democrats are proposing a \$3.5 trillion spending bill, a sizable portion of which would be allocated to climate-related provisions. Representatives have floated such ideas as investing in electric vehicle infrastructure, launching a “Civilian Climate Corps,” and even imposing a carbon border tax.

In considering how the U.S. can meet the targets set out by Biden, one fact becomes clear: the U.S. needs a carbon price.

In recent weeks, carbon pricing has entered the reconciliation debate as high-profile officials including Senate Finance Chair Ron Wyden (D-OR) and Senator Sheldon Whitehouse (D-RI) have publicly supported the policy. Some suggest that introducing a carbon price will be a key component of raising enough revenue to fund other provisions of

the bill. Others argue that even if a price on carbon is offset with other policy changes so as to be budget neutral, it is the most effective way to ensure sustainable, long-term reductions in emissions. Yet while a growing number of members of Congress appear interested in carbon pricing, it is unclear if the proposal will garner enough support to make it into any final version of the reconciliation bill.

However, carbon pricing is the most basic and effective tool to reduce carbon emissions, as much of the world has already discovered. If the U.S. continues to stand by while others move forward with carbon pricing, it risks hampering progress towards climate mitigation goals, reducing the global competitiveness of American companies, and diminishing the credibility of its commitment to climate issues on the global stage.

What is carbon pricing?

Carbon pricing is exactly what the name implies: imposing a *price* on *carbon* emissions to mitigate the negative externalities created by greenhouse gas emissions. There are two common structures for carbon pricing schemes.

The first—and administratively simpler—approach is imposing a carbon tax. Under this approach, governments levy a fixed fee that firms must pay on every ton of carbon they emit. The level of emissions may fluctuate, but officials set the level of the tax according to the projected amount of carbon emissions at that price.

The second approach is implementing an emissions trading scheme (ETS, also known as a “cap-and-trade” system) for carbon emissions. This system caps carbon emissions at a specified level for a group of companies or industrial plants and then issues emissions allowances according to this level. Firms must obtain an allowance—either directly from the government or through trading with one another—for every ton of carbon they wish to emit. Under an ETS, the price on carbon fluctuates according to market demand for emissions, but the total amount of emissions is known.

While there are substantial differences between the two systems, the core benefit of carbon pricing remains the same: carbon pricing forces firms to internalize the cost of carbon emitted during production, such that they have to incorporate the cost of

environmental damage in their production decisions.

The effectiveness of carbon pricing in reducing emissions depends in large part on their design. There are many considerations that policymakers have to take into account when designing a carbon pricing system. How much should emitting a ton of carbon cost, and how should this amount change over time? Who should be responsible for paying the carbon price—fossil fuel producers, consumers, or someone in between? Will the carbon pricing scheme be a source of revenue, and how should this revenue be used? The idiosyncrasies of the design influence popular support for the pricing system, the net cost of emitting carbon, and the environmental justice implications of the system, all of which can shape the system’s effectiveness in reducing carbon emissions.

Where does carbon pricing work?

Currently, 64 carbon pricing initiatives have been implemented across one supranational jurisdiction, 45 national jurisdictions, and 35 subnational jurisdictions, covering over one fifth of global greenhouse gas emissions. The largest and most famous of these is the European Union Emissions Trading Scheme (EU ETS), a “cap-and-trade” system that covers emissions from factories, power plants, and other installations in 30 countries (all EU countries plus Iceland, Liechtenstein, and Norway), resulting in coverage of around 40% of the EU’s greenhouse gas emissions. Other national initiatives include ETSs in Kazakhstan, New Zealand, Mexico, and (recently) China, as well as carbon taxes in countries such as South Africa, Chile, Argentina, and Canada.

Even some U.S. states have enacted carbon pricing systems: California launched its cap-and-trade system in 2013, while the state of Washington voted to enact its own carbon pricing system in April 2021. Eleven states^[1] in the northeastern U.S. participate in the Regional Greenhouse Gas Initiative, a localized cap-and-trade system that covers 18 percent of emissions in participating states. The Hawaii state senate has stated its intent to consider a carbon tax in 2022, while legislators in Oregon unsuccessfully tried to create a cap-and-trade system in 2019.

A major critique of existing carbon pricing systems has been that their price is too low to effectively reduce emissions. According to the World Bank Carbon Pricing Dashboard, prices vary wildly among different systems, from around \$0.30 per ton in Ukraine to nearly \$75 per ton in the EU. Many EU member states impose their own carbon tax in addition to participating in the EU ETS. For instance, in Sweden, companies pay a combined price of approximately \$200 per ton of carbon emissions. While carbon prices tend to be high in Europe, outside the continent, most carbon pricing systems charge less than \$20 per ton of carbon, and many charge less than \$5.

Determining the “right” price on carbon has proven to be a challenge. Many argue that the carbon price should be tied to the social cost of carbon (SCC)—an estimate of the total economic damages associated with each ton of carbon emissions. Climate economist William Nordhaus estimates that the SCC was \$31 per ton in 2015, but will grow to \$44 per ton by 2025 and \$52 per ton by 2030. The Obama administration EPA calculated similar estimates: \$36 per ton in 2015, growing to \$46 per ton by 2025 and \$50 per ton by 2030. Taking a different approach, the High Level Commission on Carbon Prices—drafted by the UN Framework Convention on Climate Change—estimated that achieving the Paris Agreement’s goal of limiting warming to two degrees would require a universal carbon price of \$40-80 per ton by 2020 and \$50-100 by 2030 to achieve. Only 3.76% of global emissions are currently covered by a \$40-80 price. Economists at the International Monetary Fund went even further, suggesting that major emitters would need a carbon price of \$75 per ton to achieve sufficient emissions reductions.

How can the U.S. benefit from a carbon price?

Implementing carbon pricing as part of the United States’ development of a 21st century climate change mitigation strategy could accomplish four key goals:

1. Mitigate climate change

First and foremost, carbon pricing is the most direct and most efficient way to achieve the emissions reductions that are necessary to mitigate climate change. The U.S. will have to take drastic action if it is to meet its climate goals. The current “command-and-control”

methods that U.S. regulatory agencies use to govern greenhouse gas (GHG) emissions are likely not sufficient to meet President Biden's goal of halving emissions by 2030. While U.S. carbon emissions have fallen over the past two decades from their peak in 2005, they have not fallen rapidly enough. The Rhodium Group projects that, under current policies, the U.S. will only reduce emissions by 20-22 percent from 2005 levels by 2025, and by 20-26 percent by 2030. This is only half of the goal set by President Biden. When considering the turbulence created by the COVID-19 pandemic, this figure could fall to only a 17 percent reduction by 2030.

Carbon pricing can reverse this trend. Implementing a sufficiently high carbon price has been projected to have significant impacts on carbon emissions. A 2019 Brookings Institution report projects that a \$25 per ton carbon tax that rises by one percent per year would reduce emissions by 17 to 38 percent relative to 2005 benchmark levels by 2030. Under their calculations, a \$50 per ton carbon tax rising by five percent per year would reduce emissions by 26 to 47 percent relative to 2005 levels—up to 90 percent of the reductions needed to achieve President Biden's Paris Agreement goal.

Some estimates find that even a smaller fee that grows over time may still have a significant impact. One of the most serious carbon pricing proposals under consideration by members of Congress involves a \$15 per ton tax levied on oil and gas producers. Resources for the Future estimates that if this tax were to begin in 2023 and rise by five percent annually, it would reduce emissions to close to 40 percent below 2005 levels by 2030. If the tax were to rise by \$10 per year, it would reduce emissions by approximately 45 percent below 2005 levels. While the U.S. cannot rely on carbon pricing alone to achieve its climate goals, the right carbon pricing system has the potential to be the country's most effective tool for climate mitigation.

In addition, any revenue earned from carbon pricing can be used to reduce the effects of climate change on the most vulnerable communities. Climate change has already disproportionately impacted vulnerable communities, and its impact is projected to worsen in the coming decades. Furthermore, the carbon pricing mechanisms and other environmental regulations needed to mitigate climate change can increase costs for consumers if costs are passed through by companies. Carbon pricing revenue should

therefore be used to offset any potential increased energy costs for low-income households, as well as to build climate resilience in vulnerable communities. In addition, such revenue could be used to provide job retraining for fossil fuel workers.

2. Justify a carbon border tax

In July, several Democrats in Congress proposed to include a carbon border adjustment tax in the \$3.5 trillion budget reconciliation bill that is currently in negotiation. Broadly speaking, carbon border adjustments are meant to protect domestic firms from having to unfairly compete with firms producing in countries with weaker greenhouse gas regulations. This has several advantages. First, it ensures that both domestic and foreign firms face similar production costs. Second, it discourages domestic firms from relocating production in response to strengthened climate regulations. This not only protects domestic jobs but also reduces the potential for carbon leakage, where environmental regulations do not reduce emissions but simply facilitate relocating them. Third, the possibility of tariffs can encourage countries and individual firms to improve their environmental practices.

For a country with strong climate regulations (and a large domestic market), a carbon border tax can be an effective tool to maintain the competitiveness of domestic firms. However, it makes little sense to institute a border adjustment in the U.S. without first imposing a domestic carbon price.

Carbon border adjustments are difficult to design even with a carbon price. In theory, policymakers determine the carbon border adjustment rate by setting it equal to the domestic carbon price, thereby ensuring that all firms—foreign and domestic—pay the same price for emissions generated during production. However, they are then faced with the decision of which goods should be subject to the tariff, which trading partners should be exempt, and how and whether the adjustment should take other greenhouse gas regulations into account. Without a domestic carbon price, setting a fair price for the border adjustment involves calculating an *effective* carbon price based on existing environmental and emissions regulations. Resources for the Future outlines one approach where importing firms are exempt from the border adjustment up to the average level of carbon emissions on a sector-by-sector basis, then face a per ton charge that is based on

the estimated marginal cost of emissions abatement. Such an approach, and any similar approaches, would be enormously complex for both administering agencies and for importing firms. Furthermore, it would be prone to inaccuracy, as firms in the same sector may still face a broad range of effective carbon prices due to differences in regulatory environments among states.

Imposing a carbon border tax without a domestic carbon price would also make the U.S. vulnerable to challenges and retaliation in global trade. The U.S. has no standing to implement a border tax if it does not have a carbon price of its own. Even the EU's new carbon border adjustment risks setting off a trade war. The U.S. border tax proposal currently under consideration would almost certainly face challenges from countries with weaker environmental regulations at the World Trade Organization (WTO). If these challenges succeeded, the U.S. would contend with retaliatory tariffs from these countries, which include major economies such as China and India. In short, a border tax without a domestic carbon price is likely to achieve more protectionist goals than climate goals.

In summary, without a domestic carbon price, the U.S. cannot credibly implement a carbon border adjustment tax.

3. Boost the global, long-term competitiveness of American companies

The lack of a carbon price has created uncertainty for U.S. companies. Without knowing if or when the U.S. will institute carbon pricing, companies cannot accurately plan future investment decisions. Some companies have tried to rectify this issue by instituting internal carbon pricing, where business units incorporate a predetermined price on carbon emissions into their present and future budgets. Yet without guidance from the federal government on what this price should be, companies might set their price too low. A report from McKinsey & Company finds that most firms set their internal carbon price below the minimum price of \$40 per ton recommended by economists and climate experts. These prices vary by industry: while the median internal carbon price set by energy companies is \$25, the median price set by financial services companies is \$6 per ton. Instituting a federal carbon price would allow firms to plan their long-term investment decisions better.

Imposing carbon pricing in the U.S. might also ensure continued access for American companies to markets abroad. Recently, the EU announced that it was planning to impose a carbon border tax on carbon-intensive imports. Importers can avoid this tax if they can prove that “a carbon price has already been paid during the production of the imported goods.” If the U.S. continues to delay carbon pricing, then imports from the U.S. will be subject to this tax from the EU, one of the United States’ most important trading partners. As more countries choose to enact carbon pricing, the risk of this happening elsewhere grows stronger. A robust carbon price in the U.S. would ensure that American firms can continue to access international markets without frictions.

Finally, instituting a carbon price in the U.S. can prepare American firms for global technological transitions, strengthening their competitiveness in the future. A carbon price will force companies to reevaluate their long-term investment decisions, shifting away from emissions-intensive production toward low-carbon technologies. Globally, a shift toward low-carbon production is inevitable, and the sooner U.S. companies can begin this transition, the more competitive they will be. A U.S. carbon price will help to ensure that U.S. companies can lead the new industries centered on low-carbon technologies that will become the lynchpin of the global economy in the coming decades.

4. Restore the U.S.’ global reputation as a leader on climate issues

Over the past few decades, the United States’ global reputation on climate issues has steadily declined. While other countries and nations, such as the EU, have set ambitious climate goals, the U.S. continues to grapple with climate deniers blocking any substantive action on climate change. It has rejected membership in both of the key global climate accords of the past two decades—the Kyoto Protocol and the Paris Agreement—even though it recently rejoined the latter. Rather than government leaders and policymakers committing to significant action on climate change, the majority of reductions in emissions over the past decade have been achieved through shifts in fossil fuel usage and increased efficiency in industry.

A carbon price could help the U.S. reverse its lagging global standing on climate issues and demonstrate its commitment to reducing GHG emissions using the most modern and effective techniques available.

Conclusion

In order to achieve its climate targets, the U.S. will need a carbon price. This will not only enable the U.S. to meet its emissions reduction goals, but also support American firms in a future low-carbon economy and signal the U.S.' commitment to effective climate mitigation policies to the larger global community.

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Footnotes

1. ¹ Participating states include: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia.