In a series of posts (beginning here, and ending here) last month, I outlined an approach to climate policy that emphasizes the role of subsidies in building political support and technological progress for climate policy. In doing so, I drew heavily on existing political science research and case studies from North America and Europe. But another fruitful approach for climate policy research can be studies that look at policies and emissions results from a large number of countries around the world. An article published last August in the journal Science took just such an approach, and received a lot of media coverage in the process. What lessons can we take from that paper?

The first lesson is one consistent with the pre-existing literature and case studies – generally speaking, the most effective policies in driving short-term reductions are a mix of different tools, including subsidies, pricing, and regulation. Policy mixes allow for policies that interact to be more effective – for instance, subsidies that reduce the costs of decarbonization technologies can have extra force when paired with carbon pricing.

The authors also emphasized the role that carbon pricing, on its own and as part of a policy mix, can have in driving short-term emissions reductions. This is an important finding, and also consistent with the literature and case studies. But there are also key limits to the study design. The authors restrict their analysis to specific short-term drops in emissions that can be correlated with specific policy changes within a two-year window. That approach does not allow identification of what drives long-term changes in emissions reductions. However, in many ways those long-term changes are far more important from a climate policy perspective. Carbon pricing can drive relatively low cost changes in behavior, practices, and technology, but the evidence indicates that it does not drive the large-scale, long-term investments needed to advance the innovation needed for decarbonization or to promote changes in political economy. As I noted in prior posts, it is tools such as subsidies that are more effective in driving those kinds of investments, and those long-term changes.

Of course, identifying what is driving long-term changes in technology, economics, and politics is a difficult challenge, and one that is not easily amenable to the kinds of quantitative methods the study authors used. Indeed, the authors note the role that sequencing plays in climate policy, and that longer-term changes in politics and technology may produce opportunities where carbon pricing may be more effective.

Weaknesses aside, the article is an important contribution. We need more studies of this kind and approach to help provide insights we can build on to help us understand the policy path forward for decarbonization.