

Carbon Cap and Trade versus Tax – Getting distracted by differences that aren't

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Introduction

As the new President and Congress take up the issue of climate change, a renewed discussion about the pros and cons of a cap and trade versus a carbon tax approach has surfaced. Most of the discussions to date have remained relatively superficial and focused on false distinctions between the two approaches. The intent of this article is to show that the debate focuses on seeming differences between the two approaches which in reality do not differentiate the two approaches. After explaining why they are not, we are offering one area of real differentiation that would make for a more thoughtful discussion of tax versus cap and trade that should guide the choice of policy instrument.

The Fallacy of the Money

Most of the arguments of tax versus cap and trade get hung up on the “tax” part of the carbon tax. Proponents of a cap and trade program point out that a carbon “tax” is simply not politically feasible (just like any other tax increase is unpopular). However, the discussion surrounding President Obama’s most recent budget proposal, which includes approximately \$80 billion per year in revenues from auctioning CO2 allowances, has made it clear that climate legislation through carbon taxes or cap and trade will have two features that can and need to be analyzed separately: both systems aim at creating a price signal for carbon, and both systems create a potential revenues stream.

Just like a carbon tax, a cap and trade system will lead to higher electricity and gas prices, and just like a carbon tax, a cap and trade system will potentially allocate large sums of money from tax payers to other entities, such as the government (as evidenced by the current Obama budget proposal).

Under a cap and trade system, the revenue generation is less obvious as it is tied to the discussion of how to allocate the carbon allowances that are issued under the cap. The Obama administration’s original proposal is to auction all of the allowances. If this solution gets implemented, the government would collect revenues equal to the number of allowances multiplied by the auction price. This would also be equal to the revenues collected from a carbon-tax set at the auction price. Several have since pointed out that this is no different from a carbon tax – and it isn't.

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One alternative solution proposed in particular by some of the entities likely regulated by a cap and trade program is to allocate the allowances to emitters for free. This is also the equivalent of a carbon tax, except that the revenues get sent directly to the shareholders of those entities receiving the allowances for free. Sounds like the current financial bail-out? It should, except that we would be sending money to many companies that don't need to be bailed out.

This illustrates that there is a separate discussion about what to do with the money collected under either system. The decision has nothing to do with the method for collecting it. Under a cap and trade system or a carbon tax money gets collected from tax payers. While under cap and trade with auctioning the money originally comes from emitters who buy allowances, the net result is the same as these entities pass on the cost of those allowances to tax payers through higher electricity rate, gas prices, etc., resulting in exactly the same revenue generation from tax payers that a carbon tax would).

The debate about what to do with the money is important and likely contentious, since lots of money will likely be at stake. However, it is completely irrelevant to the discussion whether or not a carbon tax is preferable to a cap and trade system or vice versa.

The Role of Uncapped/Untaxed Sectors

Another issue often raised by cap and trade advocates as a differentiator between cap and trade and carbon tax is the role of "offsets". Offsets are simply greenhouse gas emission reductions that occur outside the capped sectors, including measures to sequester carbon biologically such as planting trees. Cap and Trade advocates incorrectly claim that there is no way to deal with offsets in a carbon tax regime. Both cap and trade and carbon tax approaches have to find ways to deal with carbon emissions (or emission reductions) that are not capped or taxed. The decision to include a certain type of greenhouse gas emitting activity under either approach depends largely on the administrative costs of measuring and monitoring emissions and emission reductions. It is relatively easy to do so for large stationary sources of emissions such as power plants, large industrial facilities, or possibly upstream oil and gas facilities. It is much harder to do so for farting cows or bubbling rice paddies (methane) or individual cars. Because of this, cap and trade systems typically cover significantly less than 100% of greenhouse gas emitting human activities. A similar choice has to be made when implementing a carbon tax. To implement a carbon tax, one needs to define precisely what is taxed: taxing emissions directly is feasible and relatively easy for exactly the same stationary sources that are the logical participants under a cap and trade. And, just as under cap and trade, there are areas where controlling emissions upstream, by calculating the carbon embedded in a specific fuel such as natural gas or oil, is more effective than trying to control carbon emissions at the point of emission². The tougher nut to crack is how to encourage greenhouse gas emissions reductions (or carbon sequestration) in sectors where measuring emissions is difficult: In particular, the areas of agricultural and multiple small process emissions as well as bio-sequestration through afforestation, reforestation, avoided deforestation and various changes in agricultural practices

² In the latter case, a carbon tax is actually slightly easier since it would be quite straightforward to impose a carbon tax on gasoline. We are already accustomed to paying a gasoline tax and a carbon tax would simply translate into a corresponding increase in the gasoline tax. Imposing a cap at the emissions level for gasoline is harder, because it is administratively prohibitive to have individual car owners buy and sell greenhouse gas allowances. The same would be true for natural gas emissions, which could be easily taxed at the end use point.

are so diffuse and hard to measure that taxing or capping them directly is often not realistic. Because of this, existing cap and trade systems are incorporating these activities by providing credits (“offsets”) based on a technology/area specific methodologies. In many cases, the process involves some amount of estimating rather than directly measuring emissions and emission reductions. Offsets are easy to incorporate into a cap and trade system since they involve the same “currency”: one offset equals one ton of carbon dioxide and so does one allowance. However, it is equally easy to consider using the well established principle of tax credits to use offsets in a carbon tax regime: each offset purchased would entitle the purchaser to a tax credit equal to one ton of carbon dioxide equivalent priced at the carbon tax rate. Income and corporate tax forms in the United States already contain provisions for tax credits, so implementation of such a system should be relatively easy. Nonetheless, creating the right incentives for the production of offsets is difficult. But, just like the decision on what to do with the revenue generated by imposing carbon limits, it is largely independent of the choice of tax versus cap and trade.

Adjusting the tax or sticking with the cap as a real differentiator

Advocates of Cap and Trade claim that one of the major advantages of cap and trade is that the system will guarantee certain reductions in emissions. This is indeed an advantage over a carbon tax if a) we believe we know today what the right level of emissions reductions is, and b) if we believe that a cap, imposed today for some period long into the future, will indeed stick no matter how high resulting carbon prices go. We have little assurance that either one is true. In all likelihood our scientific understanding of how far we will need to cut emissions to avoid potentially catastrophic climate change will keep evolving. Similarly, it is unclear whether or not caps decided upon today will lead to the emissions reductions required under the cap. There are two reasons (at least) why they may not: first, for the caps to work, exceeding the cap needs to result in meaningful and enforceable penalties. The evidence from the first Kyoto compliance period so far is mixed on that front. Several countries, most notably Canada, will clearly fall short of their Kyoto target. However, there is no evidence that this will lead to any kind of penalty for Canada as it enthusiastically participates in the negotiations for a post 2012 agreement. If failing to meet the target in the current period means that it is ok to continue to participate in the next period as long as the long-term target is reached, the question about enforcement for exceeding the cap in the final period of any agreement must be addressed. We have not seen a policy approach that enforceably ensures compliance with a cap in the final period. Second, it is also questionable whether caps are indeed unchanged and unchangeable no matter what the resulting carbon price. The current discussions at the federal level involve greenhouse gas emissions reductions far in excess of those in the European Union Emissions Trading Scheme (“EU ETS”) to date. Under at least some reasonable predictions, the resulting carbon prices will be quite high, much higher than the prices observed in the EU ETS so far. It is difficult to imagine that there would not be tremendous pressure to control cost if the price of carbon exceeds a zone deemed acceptable. In either case, even if we knew what the right amount of emissions reductions were, an implementation through a cap and trade system would not guarantee that the cap is ultimately met.

On the flip side, a carbon tax would likely have to be revised multiple times to achieve the emission reductions deemed necessary to avoid the risk of catastrophic climate change. This is because at any initial level of a tax the resulting emission reductions are highly uncertain. Consequently, a tax will only work if it is possible to adjust it over time and it is questionable

how easy it will be to make a tax more stringent over time. This is true for potentially two reasons: first, and maybe most importantly, it is quite difficult, especially in the United States, to change any tax that is visible to the voter. For some reason the political process focuses the voters' attention much more effectively on tax changes than on other changes of laws with very similar or larger effects on people's disposable incomes. For this reason alone, a system that depends crucially on the ability to frequently change a legislatively set price signal risks getting stuck at whatever original carbon tax is implemented.

A second and related issue is that in particular an increase in any tax is quite difficult to implement in the United States. This will likely be true even if the tax will be partially or fully refunded.

It is therefore possible that an original commitment to a cap would result in more stickiness than a carbon tax in need of frequent adjustment. In other words, there is probably some tendency to stick to past decisions rather than reverse them even if doing so promises to be more costly than originally contemplated. It might consequently be easier NOT to increase the carbon tax to move closer to an overall emissions reductions goal than to do so in the face of difficult economic times that make it harder politically to sell a tax increase.

Conclusion

We hope this short article shows that the choice of policy approach should not depend on how much money gets raised by a carbon tax or by auctioning allowances under cap and trade or on how these revenues will be spent. We also don't believe that either system's ability to deal with offsets really differentiates the two approaches. Rather, we believe that a major question to be answered is how effective either approach will be when pressures to limit the economic cost of mitigating climate change make a high carbon price seem painful and how easy it is to adjust the cap or the tax in the future as we learn more about how far we really need to curb greenhouse gases so as to limit the risks of catastrophic climate change.