

Carbon Taxes and Cap-and-Trade

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**Harvard Model
Congress Asia**

INTRODUCTION

Rising Sea Levels. Famine. Mass migrations. If you have been paying attention to the news over the past few years, you have probably heard about these and other dangers posed by global warming, as well the threats they pose to humanity's well-being. You have probably also heard about the principal cause – emissions of carbon dioxide and other gases from factories, cars, and other technologies that get trapped in the atmosphere. However, despite public fear and outcry, carbon emissions, the principal cause of global warming, are still on an exponential rise. The developing world's per capita emissions are quickly catching up to those of developed countries, while the developed countries, especially the US, have done little to stem their own.

Luckily, two solutions have emerged for dealing with this crisis: the first is a tax on carbon, the other is a cap-and-trade system.

EXPLANATION OF THE PROBLEM

The scientific community has generally consented on the existence of the gradual warming of the earth's atmosphere, the dangers presented by this change, and its cause by human action.

Both the carbon tax and the cap-and-trade system utilize the theory of Pigouvian economics. Pigouvian economics states that certain things (such as coal and other substances high in carbon emission) are "too cheap," and people consume more of them than is good for society. Thus, by taxing these goods, we can decrease their consumption and make preferred alternatives more competitive. By making it expensive for companies to use highly pollutive but cheap substances, we can encourage greater consideration of their energy consumption as well as greater utilization of "green" technologies.

Carbon Tax

A carbon tax is fairly straightforward: it is simply a tax per metric ton of carbon emitted. A carbon tax thus fixes the price of carbon emissions. It is popular with economists for its clarity and efficiency. The Carbon Tax Center explains its preference for a carbon tax over a cap-and-trade scenario in six different ways:



- Carbon taxes will lend predictability to energy prices, whereas cap-and-trade systems will do little to mitigate the price volatility that historically has discouraged investments in less carbon-intensive electricity generation, carbon-reducing energy efficiency and carbon-replacing renewable energy.
- Carbon taxes can be implemented much sooner than complex cap-and-trade systems. Because of the urgency of the climate crisis, we do not have the luxury of waiting while the myriad details of a cap-and-trade system are resolved through lengthy negotiations.
- Carbon taxes are transparent and easily understandable, making them more likely to elicit the necessary public support than an opaque and difficult to understand cap-and-trade system.
- Carbon taxes can be implemented with far less opportunity for manipulation by special interests, while a cap-and-trade system's complexity opens it to exploitation by special interests and perverse incentives that can undermine public confidence and undercut its effectiveness.
- Carbon tax revenues can be rebated to the public through dividends or tax-shifting, while the costs of cap-and-trade systems are likely to become a hidden tax as dollars flow to market participants, lawyers and consultants.

Cap-and-Trade

Also referred to as an emissions market, a cap-and-trade system allows participants to buy and sell the right to pollute. Unlike the carbon tax, a cap-and-trade scenario fixes the *amount* of carbon emissions. The government can either distribute or auction off permits of allowed carbon emissions. If companies produce fewer emissions than they have permits for, they can then sell them to other power-hungry companies. The price of a carbon permit would thereby be determined by the free market, and thus fairly efficient. Furthermore, the ability to profit through the selling of excess carbon permits gives companies a direct monetary incentive to improve their efficiency standards.

The advantage of this system is its efficiency. Companies that can cheaply increase their efficiency will do so in order to profit off of the sale of permits. Meanwhile, companies that cannot easily raise their efficiency standards pay the cost of permits as an essential tax. Thus, the reduction in pollution brought about by a cap-and-trade system is at the lowest cost to society.

The goal of the cap-and-trade system is to gradually reduce the amount of permits available as companies and consumers find innova-



tive , the government has a choice on how to initially distribute permits, through auction or distribution. An auction system would distribute permits based on a company's willingness to pay, while a distribution system would allow the government more leeway to distribute permits. One popular distribution method is called *grandfathering*, which awards permits based on how much a company polluted in the past. However, this method also tends to penalize companies that took early action to modernize their technology. A distribution system is also more suspect to special interests and corruption. An auction system raises money that the government can distribute as it wishes, while a distribution system lets the companies involved keep this money.

Auction vs. Distributive

If a cap-and-trade system is enacted, the government has a choice on how to initially distribute permits, through auction or distribution. An auction system would distribute permits based on a company's willingness to pay, while a distribution system would allow the government more leeway to distribute permits. One popular distribution method is called *grandfathering*, which awards permits based on how much a company polluted in the past. However, this method also tends to penalize companies that took early action to modernize their technology. A distribution system is also more suspect to special interests and corruption. An auction system raises money that the government can distribute as it wishes, while a distribution system lets the companies involved keep this money.

Revenue Neutral

Both solutions have the potential to generate revenue for the government. There is then the question of what to do with the additional revenue from the tax. Some propose it be invested in green technologies or used to pay down U.S. debt, while others claim it should be revenue-neutral, or that all income be returned to consumers. Economists point out that either tax would, by itself, slow economic growth. In order to comply with regulations, companies have to spend money to buy more efficient equipment, upgrade their factories, and even paying the tax. These increased costs are passed onto consumers via increased prices. By increasing costs and thus decreasing consumer appetites, the economy slows and consumers have to pay a higher price. A Charles River Foundation study estimated the costs for consumers of act S.2191, a cap-and-trade implementation, at \$800 to \$1,300 per household by 2015, rising to \$1,500 to \$2,500 by 2050. Furthermore, it estimated that electricity prices could jump by up to 65% by 2015. Thus, the cap-and-trade system is not, as some politicians claim, without costs for consumers.

By returning all income from the tax to the public, the government could counteract these negative economic effects. One way of re-



turning the money is by reducing the income tax; another is by reducing the corporate tax. A reduction in the corporate tax would help companies hurt by increased costs of greener technologies, while a reduction in the income tax would help consumers hurt by increased electric bills.

Who to Tax

While it may seem politically expedient to tax corporations, any tax on a corporation will pass on the costs to consumers in the form of higher prices. Furthermore, real world experiences of the implementations of these taxes have shown that consumers are much more willing to bear the costs in the sake of environmental efficiency, while industry is quick to fight such regulations through lobbying. Thus, many implementations tax corporations at a lower rate than consumers.

The Safety Valve

A suggested way of tampering the cons of each system is a compromise: An implemented cap-and-trade system with a maximum or minimum price set per permit. Consumers of permits would have the option to buy or sell at either the free market price or the government's set price. This allows a cap-and-trade system to switch between fixed-price and fixed-quantity.

HISTORY OF THE PROBLEM

Kyoto Protocol

The Kyoto protocol is an international agreement binding industrialized countries to reduce their emissions of greenhouse gases by an average of 5.2%. Ratified in December 1997 in Kyoto, Japan, the main goal of the Kyoto protocol is to slow the pace of global warming to “a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.” It has been ratified by all developed nations (including all fifteen members of the European Union) except the United States. The United States Senate unanimously voted (95-0) in 1997 to not ratify the treaty as it omits requirements for developed nations. During the convention and the writing of the protocol, parties involved decided that developed nations bear the brunt of responsibility for reform, having emitted the majority of gases currently in the atmosphere. Furthermore, while they are growing, the per capita emissions of developing countries are still much lower than their equivalents in developed countries. This principle is referred to by the conference as “common but differentiated responsibility.”

To assist countries in attaining their designated emission limits the Kyoto protocol accounts for an emissions market. Kyoto credits



come from the Clean Development Mechanism (CDM) and the Joint Implementation (JI) projects. However, given the lengthy red tape involved, the result of the Kyoto protocol has been not one single carbon market but a series of linked markets among members.

Boulder, Colorado

In November 2006, residents passed the United State's first municipal energy tax with the goal of combating climate change. The tax is on all electricity delivered to consumers, although citizens who receive their power from certified "green" sources are eligible for tax rebates. The tax is not revenue-neutral – its primary aim is to raise funds for other greenhouse gas-reducing programs.

California

In May 2008, air pollution regulators of the San Francisco Bay area enacted a 4.4 cent per ton tax on carbon emissions. The size of the tax has been acknowledged as too small to influence behavior, but proponents hail it as a step in the right direction as well as, like the Boulder carbon tax, a way to raise funds for greenhouse emission reduction programs.

International

Carbon emissions are an international problem. However, the truly border-crossing nature of the harmful effects of carbon emissions have complicated matters of regulation.

European Union

Sweden

In 1991, Sweden introduced its first carbon tax, which was edited in 1993 to become cheaper for industries and more expensive for consumers. As of 1996, the rate for consumers was \$50 per metric ton of carbon, with industry paying \$25. This measure has had success in encouraging industries and consumers to switch to biofuels. However, Swedish industries have complained that the tax is unfair as it gives foreign industries with less strict pollution regulations a competitive advantage.

China

China definitely has an important role on the carbon emission stage. With a massive, recently economically-awakened population hungry for the power-hungry appliances (cars, air conditioning) it has long been denied, China will soon surpass the US to become the world's largest carbon emitter.



Unfortunately, it has also for the most part resisted attempts at regulation. Although China's emissions are the fastest growing of any nation, Chinese officials have reminded the public that the country's per capita emissions (4 metric tons per capita annually) are still far below those of developed nations such as the US (20 metric tons). Furthermore, most of the existing carbon in the atmosphere has been caused by developed nations, who were able to reach their current economic stature without any previous regulatory hindrance. Finally, China has been using the US's inaction as an excuse for its own: if the US can't even practice what it preaches, why should China?

Recently, though, China's interest in greening its image has grown, although tepidly. HSBC has reported that China will be spending 37.8% of its stimulus package (or \$221 billion) on green initiatives, though over three quarters of that will be used to fund expansions of railroads and electric grids, and none of the planned money is going into renewable energy or research on efficient technologies.

China also recently published a report on potential taxes on carbon and other gas emissions. However, analysts have noted the possibility of its eventual enactment seems low.

Protectionism vs. Competitiveness

Countries who wish to regulate carbon emissions face the challenges of competitiveness versus protectionism. If country A wishes to tax domestic industry, those industries are vulnerable to unregulated industries in country B, who can produce cheaper goods by polluting freely. However, if country A wishes to compensate by taxing imports from country B, it can encourage cries of protectionism. Country B could then compensate by incurring a tax of its own on country A's goods, leading to a trade war and escalating costs.

Both problems have already presented themselves. Countries such as Sweden and the Netherlands who have already begun domestic carbon tax programs have faced complaints from industry that finds competing with cheap international imports difficult. On the other hand, several nations, including India and China, have joined together to protest a House bill that would essentially create a "carbon tariff". President Obama himself has admitted to fears of backlash from other countries given the bill's protectionist leanings.

Protectionism:

The theory or practice of shielding a country's domestic industries from foreign competition by taxing imports

Congressional Action

Clinton BTU Tax

In 1993, President Clinton enacted the "Transportation Fuels Tax" which levied an average of 13.814 cents per gallon tax on gasoline, diesel, and special motor fuels. The plan originally covered a higher tax on a broader variety of fuels, but faced opposition from lob-



bying groups in congress. His experience with this bill and its unpopularity at the time led President Clinton to say at the 2008 National Clean Energy Summit, on his expressed preference for a cap and trade system, "I tried [a carbon tax] once. It didn't work for me."

Cap and Dividend Act of 2009

Introduced by Rep. Van Hollen, the bill would create an emissions market with the goal of an 85% reduction below 2005 CO2 emission levels by 2050. Permits would be 100% auctioned. This bill has not yet been voted on.

Waxman-Markey

Also known as the American Clean Energy and Security Act, ACES, H.R. 2454. One of the sections of the bill allows for an emissions market. The bill has been criticized, however, for its extensive giveaways. The bill underwent compromises amid debate in order for passage. Eighty-five percent of the allowances are given away for free, while only fifteen percent are auctioned. Of the free allowances, fifteen percent are allocated by H.R. 1579 to energy-intensive industries. Of the auction revenues, fifteen percent are allocated to low income assistance.

Other sections of the bill account for increased efficiency standards, carbon capture and sequestration, renewable energy purchasing requirements, and other regulations and standards.

RECENT DEVELOPMENTS

FOCUS OF DEBATE

Liberal View

The liberal consensus is that action is necessary to stop global warming and preserve our planet's health. Furthermore, unlike conservatives who fear the cost of regulatory action, liberals believe such action can actually boost the economy. Increasing efficiency saves Americans money, and the emergence of a green technology center, such as one created to fulfill company's needs to decrease their energy consumptions to comply with carbon regulations, could create American jobs. The Center for American Progress estimated that 1.7 million new jobs would be created by a \$150 billion government investment in green technology. Liberals also point out that green technology can free us from dependence on volatile Middle Eastern oil, strengthening national security.

Conservative View

Many conservatives dispute the severity of the effects of global warming relative to the effects on the American economy. The Heritage foundation has a strong anti-carbon regulation stance. Their re-



search has suggested that the costs to the American economy caused by global warming are dwarfed by the costs of regulation. Regulation means higher costs for companies, who not only have to raise the price of electricity (raising annual expenses for everyone who uses electricity), they also cannot afford to hire as many workers, raising unemployment significantly. The Heritage Foundation accuses the EPA and the CBO of underestimating the true costs of the Waxman-Markey cap-and-trade bill. The New American, a conservative publication, is wary of “alarmist” science – it strongly doubts that global warming is something to worry about, if it exists at all, and warns against the dangers of regulation for the American economy. Furthermore, it compares President Obama’s cap and trade plan to WWII rationing.

Presidential View

The Obama administration has a series of plans to help assist in carbon emission reduction, including investing in new technologies and putting more efficient hybrid cars on American roads. For directly reducing carbon emissions, he has a plan for a comprehensive cap and trade system where permits are auctioned. Supreme Court decision, little serious action has been taken to limit congressional tenure, though frustrations with career politicians remain.

QUESTIONS A BILL SHOULD ADDRESS

Which is the best method for dealing with the planet’s climate crisis: a cap and trade system or a carbon tax? Perhaps a plan that combines aspects of both? How will we decide who pays what? If cap and trade, who will be able to participate in the carbon market? If a carbon tax, will everyone be taxed equally? Furthermore, should we even act at all? And if we do act, what will be the bill’s cost to society? All these are questions you should consider.

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