

Cap versus Tax after Copenhagen

By Steven Stoff*

Abstract

As the Copenhagen Accord makes emphatically clear, developing countries are not accepting emission caps. This will make passing a strong national cap more difficult. Economically cap and trade is a carbon tax with the tax rate set by the permit market to make sure the cap is met. This results in a highly volatile tax rate, which slows investment, makes it more costly, and will likely create political problems as the price of carbon increases over the years.

Any strong international agreement will now need to focus on the price of carbon, rather than on emission caps. To be compatible with a global pricing commitment, any U.S. cap-and-trade policy should stabilize its price with a collar. This will also minimize the political risks of a cap's volatile tax rate. As the collar tightens cap and trade approaches a carbon tax.

Before Copenhagen, the United States lobbied hard for caps on China and India. But on the final day of the summit, "China's representative insisted that industrialised country targets, previously agreed as an 80% cut by 2050, be taken out of the deal. 'Why can't we even mention our own targets?' demanded a furious Angela Merkel."[†] China was not having caps—its own or anyone else's. India was no less staunch.

At 7pm that same evening, Obama crashed a secret meeting (discovered while trying to find a room for a final negotiation) of China, India, Brazil and South Africa.[‡] At that meeting he hammered out the Copenhagen Accord. In it there is no hint of caps for developing countries. Half of all emissions, and by far the fastest growing half, will not be capped.

One urgent reason for cap and trade — "If we lead, China will follow" — is now gone, if indeed it ever existed. More devastating for the chances of a cap passing the U.S. Senate is the fact that reality runs the other direction. If China had accepted a cap, the U.S. Senate might well have followed. But since China will not, the chances of a strong cap passing the Senate are slim to nonexistent—unless a new form of international commitment is successfully pursued. Before returning to this crucial international dilemma, let us consider the question of caps or taxes in the domestic context.

CAP AND CONTROL

Cap and trade is said to "achieve emission targets with high certainty." Targets are built in—those are the annual caps, but certainty is not. However emission "certainty" is the primary reason environmentalists favor caps. Cap and trade is about control. In fact, I've even been told by

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[†] Mark Lynas, *Guardian*, 12/22/09.

[‡] Stephen Collinson (AFP), 12/18/09, Andrew Ward, *Financial Times*, 12/29/09.

environmental regulators that cap and trade is, without doubt, a form of command-and-control regulation. Long forgotten was the fact that economists invented cap and trade as a market-based replacement for such heavy-handed regulation.

Caps do control emissions more strictly than a carbon tax. A cap is simply the number of emission permits issued in a given year. Since emitting without a permit draws a heavy fine, the cap determines total emissions. But it will not determine who emits, as would be true command-and-control regulation.

THE MAGIC OF FREE EMISSION PERMITS

Giving out free permits has become quite controversial. But do free permits matter? Not if you only care about emissions. Once the permits are given out, the owners can and will sell them to whoever needs them most—that's the "trade" in cap and trade. And even if they don't, the limited number of permits still firmly caps emissions.

But "free permits" are, in fact, quite valuable, and they are often used to subsidize special interests. Sometimes these subsidies are useful, but often subsidies are wasteful, especially ones that appear to be free or nearly so. Most of these subsidies are quite transparent, but there is one free-permit scheme that is so clever it deserves the Nobel prize in politics.

It works like this. The government hands out, for example, one million free permits to a certain company, but because of its emissions, the company is forced to hand them all back at the end of the year. Environmentalists notice this and complain that the "polluter" is not paying. That's not the half of it.

The real polluters—the end users who buy the company's products—are paying. But here's the real beauty of this scheme. The payments from end-users amount a pollution tax collected and retained by the company getting the free permits.

Economists predicted this from the day they invented cap and trade, but it's not just a theory. This scheme has now made headlines many times in Europe by generating billions in excess profits, mostly for utilities with coal-fired generators. The economics is a bit too complex to explain in detail here. But in short, the free permits with no strings attached are seen as a gift and not as a decrease in production costs. The permit requirement is seen as a cost increase and that is passed on to consumers, who pay the full cost of permits to the company, even though it was given all its permits for free.

So this scheme works like every magic trick. We watch the government and the lobbyists intently, suspicious of a handout as the government gives away billions of free permits. We see their true value. But then the company hands them all back and we see no sleight of hand. But, of course, we were watching the wrong hand. The handout didn't come from the government, it came directly out of our own pockets, as we paid more for the company's product. Cap and trade is a carbon tax, and free permits implicitly grant companies the right to keep the tax receipts.

CAP AND TAX ARE TWINS

Caps and taxes work on the same pricing principle. They both raise the cost of emissions. If a five-billion-ton cap causes permits to cost \$20 per ton, then a \$20 per ton tax will hold emissions to five billion tons. No one cares whether they must buy a \$20 permit or pay a \$20 tax, so the same carbon price has the same effect, whether the price is set by a cap or a tax.

This gives us a short-cut way to think about caps. Cap and trade is simply a carbon tax set by the market. Since companies buy permits to avoid running short and paying a fine, the market will raise or lower the "tax rate" just enough to make sure the cap is met.

Many claim that because the market sets the tax rate, the rate will be optimal. But, the market is just doing the government's bidding. If the government sets a tight cap, the market will set a high tax rate. The market has absolutely no idea what tax rate is best for fixing climate change.

The similarity between caps and taxes runs so deep that when economists build their huge models of cap and trade, they don't actually include cap and trade in the model. It's just too complicated. Instead they build in a carbon tax. If they want to test a five-billion-ton cap, they just try out a few tax rates until they find one that hits the cap.

NOT IDENTICAL TWINS

As the modeler's trick implies, caps and taxes share the same basic economics, but caps are far more complex in their operation. This complexity opens the door to political differences. In particular, the complexity of caps brings one political advantage and one disadvantage. Cap and trade makes it easier to hide the ball, but it also makes us more vulnerable to the law of unintended consequences.

Hiding the ball. As noted, free permits are a great way to hide the handouts. But people are catching on. In his February 2009 budget, Obama proposed to auction all the permits. That completely spoils the free-handout game. Of course Waxman and Markey tossed that idea out on day one. But, they have had to be quite careful about avoiding the kind of huge excess profits seen in Europe.

A second obfuscation may be more important. Cap and trade may be so complicated that few will guess it's a tax. However, those who dislike taxes most, call it cap and tax, while those who don't mind taxing for a good cause more often say it's not a tax. Unfortunately, it's not that helpful to hide the ball from your own team.

Unintended Consequences. The permit market is extremely volatile. The best measure of this is the EU's Emission Trading Scheme (ETS), a.k.a the EU's cap-and-trade market. During the huge stock-market swings of the past five years, the price of the EU's carbon permits has been three times as volatile as the S&P 500 stock index.

One consequence is that investors in green technology will hesitate before responding to such a volatile price—waiting to see which way it will go next. When they do invest, they will charge a risk premium. Hence, for subtle reasons ignored above, cap-and-trade actually requires a somewhat higher price to get the job done than does the more predictable carbon tax. But the more worrisome consequences are political.

The political consequence is that the public is likely to respond negatively to a volatile tax set by the market. At first, when permit prices are fairly low, this will not be much noticed. But to cut emissions by, say, 50 percent, the price of permits—the effective tax rate—will have to become quite noticeable. Then when the price doubles, a political backlash seems more than likely. This problem will only be compounded by reports of speculators making a killing (quite by accident) as a permit price bubble drives up carbon taxes.

EITHER CAN BE CHEAP

There's another way that caps and taxes can be twins. If all the permits are auctioned, a cap will collect the same revenue as a tax. And of course that money can be spent in exactly the same way as tax revenues. But a more interesting possibility is to just give the money back. One way is to use carbon revenues to reduce some other tax, such as the payroll tax. But a simpler approach teaches a most important lesson.

To give the money back, just divide the carbon revenues by the U.S. population and send everyone equal checks. This is fair, because it's just the same as giving everyone an equal property right to pollute the atmosphere and letting those who wish to emit more buy rights from those willing to emit less. This

is individual cap and trade. But let's return to tax and refund—it has the same effect, and it's vastly simpler. Alaska returns about \$1,000 per year in oil-tax revenues by sending out equal-per-person checks each year in June.

Because emitting less does not reduce an individual's refund, the refunds do not reduce the incentives of a carbon tax. So it appears that, with 100 percent refunds, we get emission reductions at no cost to the country. In fact it seems that the tax and refund could be raised to any level to accomplish any reduction at no net social cost.

That's too good to be true. The hidden cost comes from business and consumers spending to cut emissions. But this cost is strictly limited. There is no use in spending \$100 to save \$20 in taxes. In fact, since there are some cheap ways to cut emissions, the average cost is only \$10 per ton when the price of emitting is \$20 per ton. That's the standard economic approximation used by the Environmental Protection Agency.

The cost of cutting emissions 20 percent with a \$20 carbon tax works out to be about \$12 billion, or about 10¢ per person per day. And that's why every economic analysis of cap and trade says it's cheap. The economic models build in a fully-refunded carbon tax. The problem is that in reality, tax revenues are likely to be spent, and spending all the revenue would raise the cost by about \$100 billion dollars. But caps and taxes by themselves are cheap and effective.

BACK TO THE GLOBAL PICTURE

Without global cooperation, either a U.S. cap or a U.S. tax will make little difference. But to achieve global cooperation we must understand why Kyoto-style international caps were rejected by developing countries. Consider the most recent and reasonable of the capping proposals.

Todd Stern's trend-line caps would cap India at *half* the per-capita emissions level of the US in 1880—not 1980. How should the Indian government explain to its people that because we emit so much they must emit so little? And had China accepted such a cap from Stern in 2000, China would have been buying \$60 to \$90 billion worth of carbon permits on the international market right now. How would they explain to their citizens, that because they are less poor, and now make glass and steel for the rich countries, that they must buy pollutions permits from abroad?

We need an international climate commitment that allows developing countries to avoid caps and allows industrial nations to use cap and trade. In other words, at the international level, the answer to the cap-or-tax question must be "either is fine." Fortunately both work by pricing carbon.

So countries should commit not to a cap but to a global carbon-price target. And U.S. domestic policy should support such a commitment. If the global price target is \$20 per ton, the U.S. should make sure its cap, or tax, or some combination of the two meets that commitment. This could be done with pure cap and trade, but given the erratic nature of permit prices, a price floor and price ceiling seem highly desirable if not absolutely necessary.

Fortunately the need for more price stability to meet our commitment to a global price target coincides with the need to reduce the domestic political risks of price volatility under a pure cap. Besides curbing price volatility, the other key to long-run political acceptability is to keep carbon pricing cheap and to make that clear. The best way to do that is to avoid spending revenues on handouts and subsidies. And nothing would make that as clear as seeing all the cap or tax revenues returned each year with an Alaskan-style check in the mail.