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Is A Carbon Tax the Answer?

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Is the answer to the clean energy battle a carbon tax? A carbon tax will likely reduce domestic energy consumption. However, unintended consequences pose some problems to consider.

In economics, many situations are examined using the supply and demand curves. The intersection point is the market equilibrium, the most efficient situation, or the point where nobody, as in consumers or producers, can be made better off by moving away from it. This market efficiency exists in the absence of externalities, which are defined as an extra cost to society not accounted for in the supply and demand curve. When a negative externality exists—like, say, the impacts of using energy on the environment—the market cannot capture this cost and has to be adjusted. This adjustment can be done with a tax—in this case, a carbon tax. If the tax matches the impact, the new equilibrium price and quantities represent an efficient situation. With the negative externality of carbon emissions, a tax would reduce the amount of energy used and partially “pay” for the likely negative effects of carbon emissions in the future. However, this extra cost to producers might cause some problems for our country.

Possible rationales for a carbon tax are to reduce the overall demand for fossil fuel energy or to find a substitute energy source that does not emit carbon. Reduced overall energy demand often results from decreased industrial energy demand, which can result from better efficiency of production or reduced domestic production. As globalization increases, reduced domestic industrial production can be a result of production or manufacturing facilities being moved to lower-cost areas such as China. If all aspects of production were considered equal between the US and other countries, a carbon tax would provide a relative fee on production compared to countries without a carbon tax. The extra fee would potentially tempt manufacturing companies to move their operations to places without the fee to capitalize on gains from trade. Trade results in better economic development for the US and other countries because of improved allocation of resources like capital, labor, and materials (XU 2009). This trade would mean that both China and the US benefit economically as we get the product cheaper, and they receive our payment for it.

The problem is that we are not just exporting our manufacturing and our manufacturing jobs; we are also exporting our emissions. In China, coal is the primary source of energy used to produce the products exported to the United States, and manufacturing is the primary source of pollution during production; so we are placing the burden of the environmental impact on the exporting countries. A study from 1997 to 2003 shows that US imports account for 7 to 14% of China’s CO₂ emissions (Xu 2009). The purpose of implementing a carbon tax is to reduce emissions. We may reduce emissions in the United States, but exporting them to China is still

going to have a major environmental impact. The overall result is additional dependence on foreign countries without significant reduction in conventional “fossil fuel-derived” energy consumption.

Possible substitutes to conventional energy and relief from a carbon tax are renewable energy sources. Germany has been a leader in the green energy movement, partially due to their population’s strong public support. However, their government efforts have left them with “massive expenditures that show little long-term promise for stimulating the economy, protecting the environment, or increasing energy security” (FrondeI, Ritter, Schmidt 2009). A common argument for investment in renewable resources is that they offer a “win-win solution” with environmental stewardship and economic prosperity; however, that is not the case. For example, Germany’s feed-in tariff system—instituted to back and promote renewable energy sources—has actually caused electricity prices to increase without any significant reduction in emissions, or an increase in employment, energy security, or technological innovation. In the long run, Germany is finding that their net employment balance has stayed at zero and may even be negative. Their high energy prices have consumers spending less money on other things, in turn hurting their economy overall. Their energy security has gone down as a result of their need for backup power since renewable sources are rather inconsistent. Germany’s experience should be a “cautionary tale of massively expensive environmental and energy policy that is devoid of economic and environmental benefits” (FrondeI, Ritter, Schmidt 2009).

So is a carbon tax the answer? A carbon tax would decrease the energy consumption in the United States. However, unintended consequences may only shift our emissions to developing countries. It may also force us to invest in current renewable source technology, which has not proven to significantly make a positive impact on the environment. These are considerations that must be taken when deciding our course of action to better our environment.

References:

Xu et al. Environmental Science & Technology 2009

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(Xu 2009)

FrondeI, Manuel; Ritter, Nolan; Schmidt, Christoph M.; Vance, Colin (2009)

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