2) Argue the case for or against a "heavy" tax on carbon emmisions using political economy theory.

Introduction

The 2015 Paris Agreement, an international climate treaty, was adopted by nearly every nation in the world to combat and reduce greenhouse gas emissions (GHG) to limit the global temperature increase to 2 degrees Celsius above pre-industrial levels (UNFCCC, 2020). The agreement contains commitments to cut climate pollution from all major emitting countries and to increase these in the long run (UNFCCC, 2020). The Paris Agreement reasserts the need for the developed nations to take the lead in providing financial assistance to the less developed and more vulnerable nations to help them achieve their commitments to mitigate carbon emissions (UNFCCC, 2020). To do this, there is need for climate finance, large-scale investments are needed to reduce the GHG emissions (UNFCCC, 2020). It is no less important for adaptation, as adapting to adverse effects and reducing the effect of climate change will also be costly (UNFCCC, 2020). One effective measure to reduce GHG emissions and deter the use of fossil fuels, is a heavy carbon tax (Parry, 2021). By setting an exact price on carbon by specifying a tax rate on emissions from GHG on corporations, it is possible to reduce these emissions to the lowest possible cost (Parry, 2021). Thus, the carbon tax mirrors the cost that burning carbon generates and ensures that both consumers and corporations reimburse society for the external costs they inflict on the world (Engineered Systems, 2021). A carbon tax can be a very effective mitigation policy, in this text I will first explain what a carbon tax is, before giving a neoclassical explanation of a carbon tax as a market mechanism, then I will examine some positive implications of imposing a heavy carbon tax and provide arguments for introducing such a tax.

Carbon tax

Carbon tax is a form of carbon pricing, which is a promising way of reducing GHG emissions while avoiding unnecessary costs (Marron & Morris, 2016, p. 1). A key design element of a carbon tax is how governments spend their increased tax income (Marron & Morris, 2016, p. 1). In a broad policy perspective, it is beneficial to categorize the spending into three alternative policy goals: (1) compensating the new costs that a carbon tax imposes on consumers, producers, communities, and the broader economy; (2) supplement further efforts of reducing GHG emissions; and (3) funding public priorities in other areas than climate (Marron & Morris, 2016, p. 1).

Theory

The main principles and assumption of neo-classical economics lies in their faith in prices and markets as the only organizing power for economic interaction (Atkinson & Heckler, 2010, p. 11). Neo-classical economics believe that with less interference from public policy in the market, the more efficient and in equilibrium it will be (Atkinson & Heckler, 2010, p. 11). However, for a neo-classical economist, the limit for instituting a market failure is high (Atkinson & Heckler, 2010, p. 11). In this case, global warming, the production of GHG does not count as a normal good, rather an environmental externality (Atkinson & Heckler, 2010, p. 11). Carbon emission is a by-product of a given good, and its societal costs are not mirrored in the energy price, which is a market failure (Patt & Lilliestam, 2018, p. 2495). Neo-classicalists therefore paint global warming as a conventional pollution market failure (Atkinson & Heckler, 2010, p. 11). By imposing a carbon tax, it sets a price on carbon equal to the social costs of producing the good, correcting this market failure, thus leading the market to a new optimal equilibrium (Patt & Lilliestam, 2018, p. 2495). A carbon tax is a market solution to combat the negative externality, so that producers, consumers both pay the price (Atkinson & Heckler, 2010, p. 11).

Discussion

By introducing a heavy carbon tax, it incentivizes people to avoid the use of fossil fuels. This is achieved through the market mechanism the tax brings along, which is higher production prices will lead to higher commodity prices (Atkinson & Heckler, 2010, p. 11). If consumers must pay a higher price for an item that is produced in an environmentally unfriendly way, with high GHG emissions, they will be encouraged to buy a cheaper product, manufactured using cleaner energy (Atkinson & Heckler, 2010, p. 11). This is an effective way of making people pay the price mirrored by the societal costs of producing the product (Patt & Lilliestam, 2018, p. 2495). Some emissions will remain, because some are willing to pay the extra price, because they strongly prefer the product over the alternatives (Patt & Lilliestam, 2018, p. 2495). An example of this is the incentive to change from gasoline diesel cars to electric. If the price of gas increases, and/or the production of electric cars are subsidized or more environmentally friendly, it will be cheaper to own and drive electric, thus reducing emissions. An example of such a big success of this can be found in Norway, where the Norwegian parliament set a goal that all new cars sold by 2025 should be zero-emission

(Norsk elbilforening, 2021). The result was that by the end of 2020, more than 330.000 registered battery electric cars were registered in Norway, holding a 54 % market share (Norsk elbilforening, 2021). This success can be accounted for by well-put policy instruments and big incentives for consumers to choose greener cars, such as no road tolls, cheaper ferries, and exemption from 25 % VAT on purchase (Norsk elbilforening 2021).

A heavy carbon tax also incentivizes companies to switch to cleaner and more renewable energy sources. Here, the argument for the people applies to companies as well. If a company has high GHG emissions, such as oil and gas companies, they should pay for the damage they induce on the climate (Patt & Lilliestam, 2018, p. 2495). However, this puts pressure on companies to transition faster, to mitigate losses from the carbon tax and potentially increase revenue (Atkinson & Heckler, 2010, p. 13). Furthermore, this can stimulate innovation to find low-carbon alternatives to emission heavy production means (Atkinson & Heckler, 2010, p. 13). It can also push for competition and innovation in renewable energy sources, making them cheaper and more available (Atkinson & Heckler, 2010, p. 13). In Norway, where there is a massive oil industry, policy has been set where all revenue from the carbon tax stemming from this sector (about 700 million $), will fund transitioning and innovation in renewable and clean energy (Brenne, 2020).

The most obvious economic benefit from a heavy carbon tax is the increased government tax income. However, careful consideration is needed for how to spend this increased tax revenue. An important way of spending it, will be to offset the burdens on consumers, producers and society as a whole (Marron & Morris, 2016, p. 1). It is especially important to reduce undesirable distributional harms, such as rural communities, who are more dependent on their cars and generally has a lower income, thus doubling down on these harms (Marron & Morris, 2016, p. 1). For the consumers, a carbon tax would increase prices for gasoline, electricity and other fossil fuel-based energy sources (Marron & Morris, 2016, p. 1). Lower income households often have a large share of their budgets allocated to energy, thus the more important offsetting some of these burdens on those who need it the most (Marron & Morris, 2016, p. 1). This is a clear advantage of a carbon tax over other climate policies, as it creates revenue that can help alleviate the burdens imposed on those who suffer the most (Marron & Morris, 2016, p. 1).

Another benefit of imposing a carbon tax is that it is a very cost-effective way of reducing GHG emissions and has become a very popular way of doing so, bringing in over 25 billion $ worldwide, in 2018 (World Bank, p. 9). The reason why it is so cost effective, lies in the market mechanisms it brings along with it. By increasing the costs for producers to produce a good, through paying a tax on the GHG they emit, the goods will become more expensive, thus the market incentivizes consumers to choose cheaper goods, which most likely will have been produced in a more ecofriendly way (Atkinson & Heckler, 2010, p. 11). However, this will lead to a decrease in the fossil fuel markets, which in turn, will result in closures and layoffs in fossil fuel industries, especially coal (Marron & Morris, 2016, p. 2). But, spending some of the revenue from the carbon tax can be used to finance the transition over to new greener industries, like wind or solar. If the affected workers are re-trained to work in more ecofriendly industries, it will offset the social consequences of the impact of the carbon tax on these industries.

Another way to spend the revenue from the carbon tax, is to invest it to pursue further emission reductions, thus amplifying the climate benefits of imposing it (Marron & Morris, 2016, p. 3). This can build support among the public who are skeptical to price signaling or doubt the tax price will be high enough (Marron & Morris, 2016, p. 3). By introducing subsidizing policies, funded by the carbon tax revenue, aimed at filling the gap where the behavioral changes the tax misses, such as pollution cleanup etc. (Marron & Morris, 2016, p. 3). Subsidies can also be spent to encourage the same behavioral changes as the tax, for example, the public could be incentivized to install rooftop solar panels or funding to power companies for building and operating renewable energy sources (Marron & Morris, 2016, p. 3). These policies can also aim at businesses and people who have already chosen cleaner or renewable energy sources, this could be tax-cuts, which the revenue of the carbon tax would offset (Marron & Morris, 2016, p. 3). However, their cost may surpass the benefits they offer, as subsidies are less effective at correcting externalities than imposing an equivalent tax (Marron & Morris, 2016, p. 3). A study by McKibbin, Morris, and Wilcoxen (2011) show that in the US, a carbon tax would bring in 20 times more reductions in GHG emissions than an equivalent subsidy for cleaner and more energy efficient household items (Marron & Morris, 2016, p. 3).

A final approach to spending carbon tax revenue is to use it for public purposes, such as lower taxes, reduced borrowing or higher government spending (Marron & Morris, 2016, p. 5). By doing so, it would gain further public support, since the tax revenue will go back to the public.

It can also be a great tool to balance national budgets. Most nations undergo national budget deficits, and the increased tax revenue can be used to balance these budgets, thus avoids worsening the deficits and potentially lowering national debt (OECD, 2021).

Conclusion

A carbon tax can be a very cheap and efficient GHG mitigation policy, in contrast to other emission reduction policies. It incentivizes both the public and companies to reduce their emissions by market mechanisms induced by the carbon tax. One reason for the tax´s effectiveness is the fact that the polluter must pay for its emissions, correcting this market failure. It can also encourage companies and the public to switch to more environmentally friendly energy sources more quickly, because they have to pay for their pollution, either as a producer or consumer. It also stimulates innovation to find less expensive and more available clean energy sources. A carbon tax can also bring in enormous tax revenue, which can be spent to offset negative externalities of the tax or invest in further emissions reduction policies. Finally, a carbon tax is a GHG mitigation policy that is easy to understand, effective and readily available for all policymakers, however, careful consideration must be considered on how to spend this increased revenue.

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