

# The political economy of carbon tax

- A neoclassical argument for heavy carbon tax

Term paper POL2012

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# 1. Introduction

A principle cause of human-created climate change is CO<sub>2</sub> emissions from burning fossil fuels. The focus of how to defeat the climate crisis therefore lies on how to reduce these emissions. There are several reasons as to why this issue demands an economic perspective. One, is that studies show a positive impact of economic growth on CO<sub>2</sub> emissions (Yusuf, Abubakar, & Mamman, 2020). This can be seen as a result of supply and demand. “People, through their consumption and production, emit GHGs” (Stern, 2008, p. 1). A further connection between economics and emissions is that “greenhouse gas (GHG) emissions are externalities and represent the biggest market failure the world has seen” (Stern, 2008, p. 1). Using political economic theory, it can be argued for several, very different ways to tackle the issue of emissions through economic measures. In this assignment, the neoclassical economic theory is chosen to present a solution to the issue of CO<sub>2</sub> emissions.

In this paper, I will argue the case for a causality between high carbon tax and decrease in emissions, using neoclassical economic theory. I will make theoretical arguments that pricing mechanisms, in the form of a carbon tax, will discourage the consumption of CO<sub>2</sub>-heavy commodities.

To answer the assignment, the paper starts out with (2) a presentation of the relevant theory. Then, (3) empirical data from a case study of carbon tax in Australia is presented. Next, (4) the theory is put in context of the empirical data, and theoretical arguments are made. Lastly, (5), the paper is concluded.

## 2. Theory

### 2.1 Neoclassical theory

The neoclassical theory looks at individuals and individual firms, and it is deductive, being based on assumptions of rational actors, and then logic is applied to this assumption. The assumptions state that consumers are utility-maximisers and that firms are profit-maximising. The political economic theory emphasises the self-regulating market. The equilibrium naturally appears as a result of the consumers aim of satisfaction, which is considers as consumption of goods and services, and the supplier’s goal of profit maximation. These are

the market forces, also referred to as the forces of supply and demand. (Wolff & Resnick, 2012, p. 52)

### 2.1.1 The principles of supply and demand

The neoclassical theory states that supply and demand interact in a way that creates equilibrium. Both supply and demand determine the price of a commodity in an equal degree. If demand increases and the supply stays the same, then the supplier's will charge more for the commodity. In the other end, if supply exceeds demand, then the price will fall. Following these changes in price, demand will, as consumers maximise well-being through maximum consumption of goods, increase as price goes up, and decrease when price goes down. (Gale, 1955, p. 155)

### 2.1.2 Externalities

Although neoclassical economists value the market as an efficient arena for allocating resources economic resources, they acknowledge the possible failures of the market, and recommends public policies in some circumstances. One of these possible failures is externalities. An externality is a cost or benefit of production or consumption that the individual actors cannot be repaid or charged for, which makes it neglected. (Buchanan & Stubblebine, 2000)

## 2.2 Carbon tax

Carbon tax is “a tax on carbon emissions generated by the combustion of fossil fuels” (Poterba, 1992, p. 72). The tax is designed to internalize extralities, to distribute the costs of carbon pollution in a way that moves the cost from being equal for everyone no matter the degree of emissions, to the ones responsible, proportionately with their carbon emissions.

### 3. Empirical data

In the study of *The Environmental and Economic Impact of the Carbon Tax in Australia*, a comparative model is used to “single out the effect of carbon tax policies while keeping other factors being equal” (Meng, Siriwardana, & McNeill, 2013, p. 317). This is done in two turns, one including, and one without, a compensation policy. The model makes neoclassical economic assumptions, assuming a perfectly competitive economy. The study concludes that a carbon tax emissions can cut emissions. (Meng et al., 2013)

Overall, the simulation results show that a carbon tax of A\$23 per tonne of CO<sub>2</sub>-e can cut emissions effectively, but cause mild economic contraction, and that the proposed compensation plan has little impact on emission cuts while mitigating the negative effects of a carbon tax on the economy. (Meng et al., 2013, p. 329).

### 4. Discussion

According to neoclassical economy, because the actors are utility-maximising, and the customers seek satisfaction through consumption, then the cheaper, more available alternative will always be preferred. The producers will also maximise profit by choosing the cheapest possible way of production. So, in order to make the more sustainable products preferred for both actors, the gap in production must be closed. In order to make the sustainable products competitive, there need to be an incentive to abandon CO<sub>2</sub>-heavy products and focus on sustainable products. From a neoclassical point of view, because of the focus on market equilibrium, this would be achieved with fine-tuning economics through the price mechanism.

The neoclassical economists consider the problem of emissions as an externality, that is, a cost that is produced but not paid for, and point to the solution being an internalization of this externality, making the emitters pay for the cost that they apply to the environment. The price mechanism should therefore be designed to hit carbon emitters, which can be done through a carbon tax. A carbon tax will be a way of internalizing the externality of pollution. Price on carbon is “a classic and sound approach to externalities and is crucial for an incentive structure both to reduce GHG emissions and to keep costs of abatement down” (Stern, 2008, p. 23).

A carbon tax would decrease emissions, because of the principles of supply and demand. An increase in price of carbon products will decrease the demand, and the renewable products, which do not face the carbon tax, will become cheaper, and the demand for them will increase. “With a proxy for the social cost brought into the (self-interested) decision making of firms and households, the market outcome should move to the socially efficient level” (Twomey, 2012, p. 8). The empirical data, making the same assumptions as the neoclassical theory, strengthens the argument for a causality between a higher carbon tax and decreased emissions, by modelling the neoclassical scenario of carbon tax, and finding a causality. The carbon tax is a possible solution to the environmental problems, leading to better environmental outcomes, and keeping the individual market freedom through a better, more socially efficient market.

## 5. Conclusion

The climate crises is a comprehensive issue that demands urgent, drastic action. The neoclassical economic solution to the issue is simple. A single tax can be implemented, and the rest can be left to the market forces. With a slight guidance from governments, rational actors will form an equilibrium in a sustainable direction.

However, some are more critical towards this very simple approach (Keen, 2021). For a further debate on the topic, it would be interesting to see the standpoint of the Keynesian economists and the Keynesian vicious cycle. It would also be interesting to explore what happens to those who are unproportionally hit by the taxes. If these are to receive compensation, then the tax may be zeroed out. Joseph Schumpeter’s model of creative destruction could also be relevant here, both as an argument for or against carbon tax, depending on whether or not you consider the economy turning into socialism to be a good or a bad thing.

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