AP7 – Macroeconomic

Proposal for first deliverable – July 2020

There are several challenges regarding the introduction of a carbon tax for transportation and heating fuels, including acceptance risks from low-income households who rely on private transportation on a daily basis, which can undermine the public perception of climate mitigation policies in the long-run. Therefore, the utilization of revenues from the carbon tax plays a critical role on the long-term acceptance of environmental policies as they can make the perceived benefits outweighs the costs.

With the aforementioned challenges in mind, this work focus on the case of Germany and its carbon tax, which starts being applied in 2021 on heating and transportation fuels. In order to assess the potential costs and gains from such policy on German Households, a number of carbon-pricing packages will be explored based on two key pillars: i) level of tax, ii) distribution of tax revenues. Finally, the impacts will be depicted in terms of income distribution, tax burden, economic growth, collected revenue, reduction of emissions and GDP development. Additionally, this first deliverable will focus on the short terms effects, until 2030.

There are three level of taxes:

1. Constant at 25€
2. Constant at 240€
3. Variating according to the [proposal for German CO2-Price](https://dip21.bundestag.de/dip21/btd/19/199/1919929.pdf) (55€ in 2025 and 97,3€ in 2030)

And four revenue recycling schemes

1. Green spending (no redistribution)
2. Lower electricity price
3. Equal dividends
4. Dividends according to income

With this mix, it is possible to investigate the impacts of distinct levels of CO2-taxation and different revenue recycling options. Besides, they are in line with the German CO2-price and the CO2-Bepreisungsvariante presented last year. This first study would serve as a basis for the next two phases of AP7, in which the economic analysis can be refined as the project consortium deems fit, and would already deliver results to initiate the discussion about CO2-pricing with stakeholders.

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Kosten ( € pro Tonne CO2) | | | Rückverteilung | | | |
|  | **25** | **55 - 97,3** | **240** | **Green spending (keine Rückverteilung)** | **Strom-preise senken** | **Dividende, nach Einkommen** | **Dividende, gleich** |
| 1 | X |  |  | X |  |  |  |
| 2 |  | X |  | X |  |  |  |
| 3 |  |  | X | X |  |  |  |
| 4 | X |  |  |  | X |  |  |
| 5 |  | X |  |  | X |  |  |
| 6 |  |  | X |  | X |  |  |
| 7 | X |  |  |  |  | X |  |
| 8 |  | X |  |  |  | X |  |
| 9 |  |  | X |  |  | X |  |
| 10 | X |  |  |  |  |  | X |
| 11 |  | X |  |  |  |  | X |
| 12 |  |  | X |  |  |  | X |

**Table 1: Scenario matrix for AP7**

Targets for other regions:

* Other EU-28
  + In line with ESR for 2030.
  + Modeled as national cap-and-trade for non-ETS sectors.
* Non-EU-28 regions
  + Middle-of-the-road targets
  + Modeled and national cap-and-trade for all sectors

Open Questions:

* UK in the EU or not?
  + If not, which targets should they follow?
* What will be the reference scenario?
  + Potencia?
  + Current policies?
  + New targets without German carbon price?