Fiscal Considerations in the Design of Green Tax Reforms – Evaluating their Revenue Potentials

GGKP Conference, 29.01.2015, Venice, Italy

<u>Speaker:</u>
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Different Goals of Environmental Fiscal Reform (EFR)

Structure of presentation

- Green Budget Germany (GBG)
- Research question
- Conceptual framework
- Revenue potentials influenced by several factors
- Examples of various EFR-elements

Introduction GBG / GBE

- **Non-profit organisations / political think tanks**
  - Founded in 1994 (GBG – Green Budget Germany)
  - Founded in 2014 (GBE – Green Budget Europe), initially a GBG-project from 2008 on

- **Our vision:**
  - An ecological and social market economy, in which "prices tell not only the economic, but also the ecological truth" *(Prof. Ernst Ulrich von Weizsäcker)*

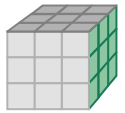
- **Fields of Expertise**
  - Market-based instruments, particularly in the energy/climate policy
  - Ecological tax reform / taxes and levies on energy and resources
  - Phase-out of environmentally harmful subsidies

Research Question

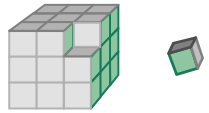
How to evaluate the revenue potential of an Environmental Fiscal Reform (EFR) instrument?

Conceptual framework for EFR revenue potential

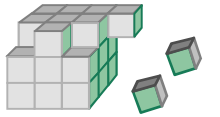
Revenue potential of an EFR instrument



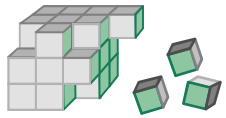
- Exemptions and reductions



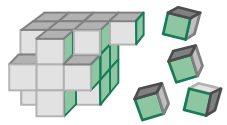
+/- External revenue effects



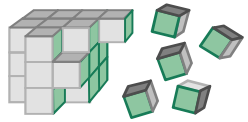
- Inflationary and time effects



- Administration costs

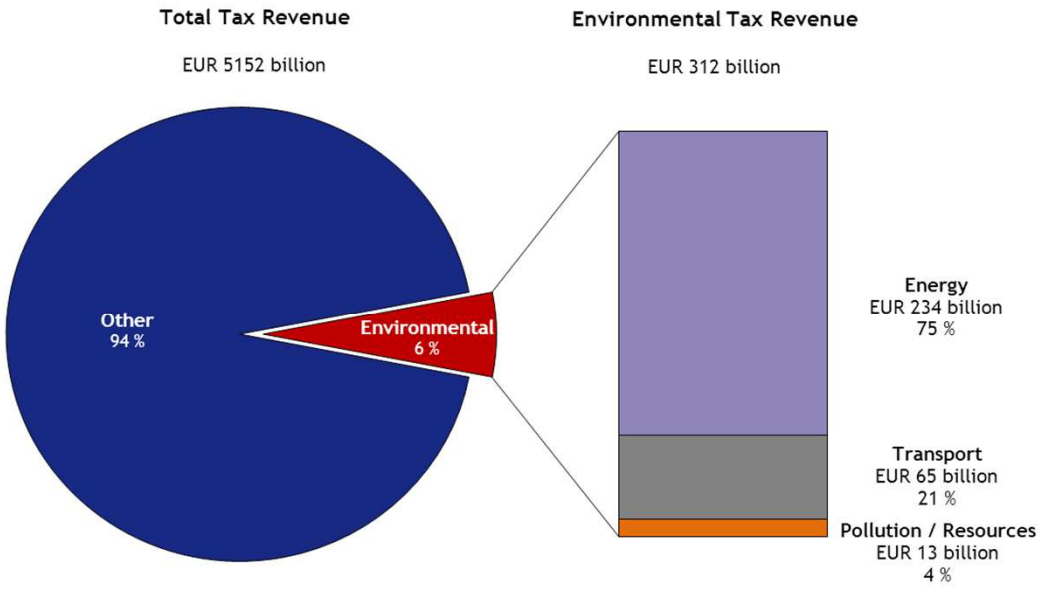


- Costs of compensatory spending



The revenue potential of EFR is large and mostly untapped

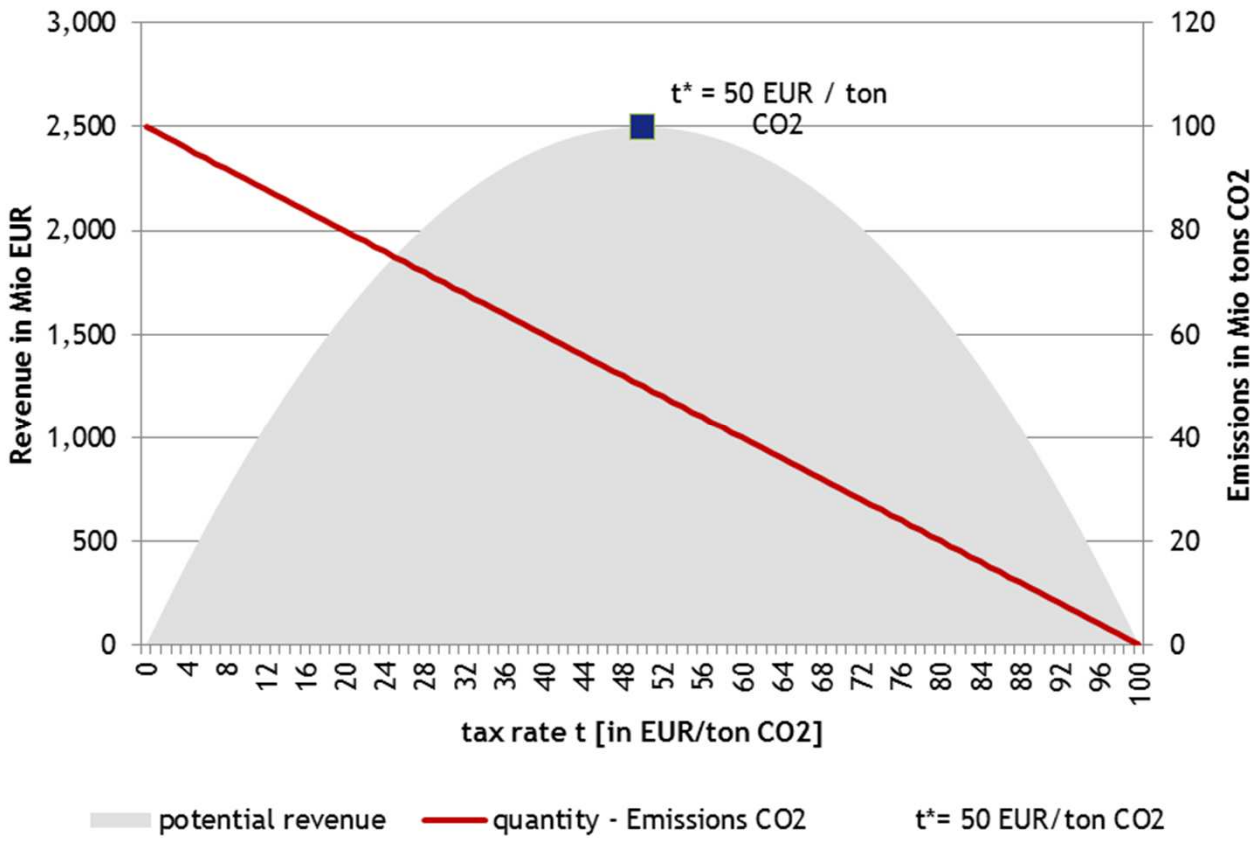
- 6 % of tax revenues in the EU are environmentally-related taxes



- Immense potential e.g. Portugal: Could increase EFR revenue by 65 % in 3 years

Potential revenue of EFR instrument depends on several aspects - R = t * Q

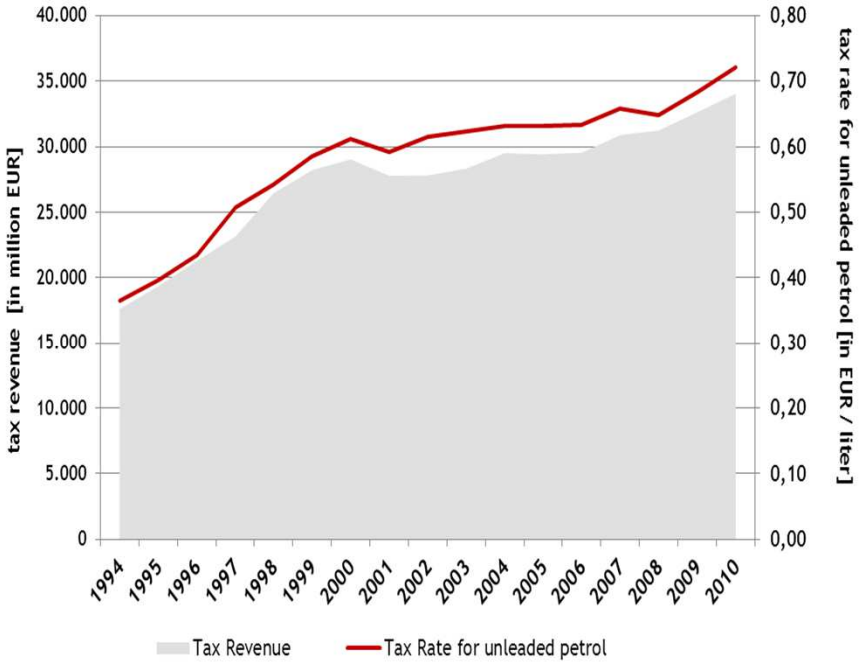
- Increases in tendency with increasing tax rate
- Increases with size of tax base
- Interaction between the two → elasticity
- Decreases with increasing elasticity



EFR revenues have different characteristics depending on the specific instrument

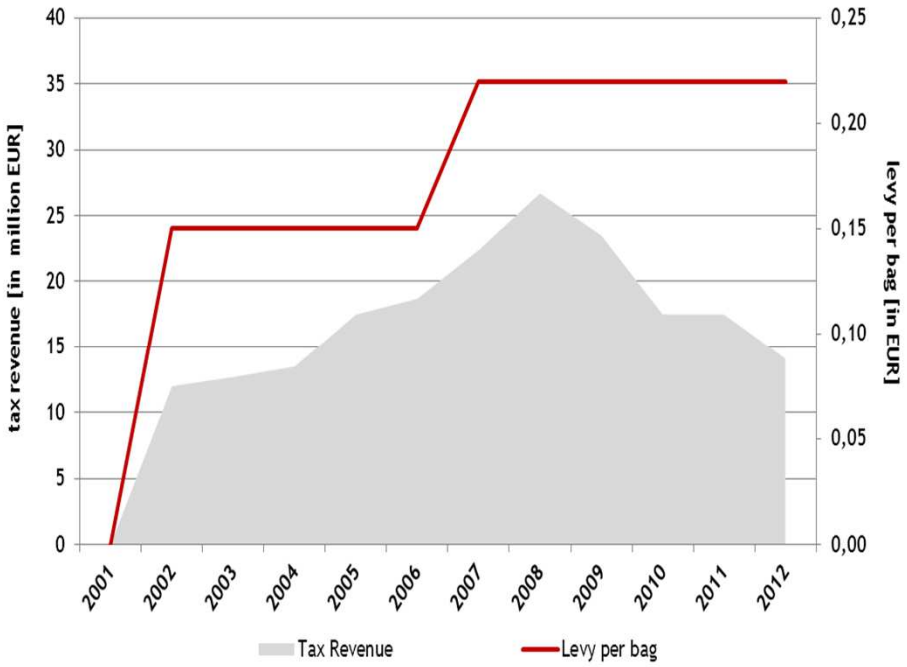
Figure 1: Comparison between UK fuel levy and Irish plastic bag levy

Broad base / low elasticity



Source: Own based on publicly available data by HM Revenue & Customs (see http://customs.hmrc.gov.uk/)

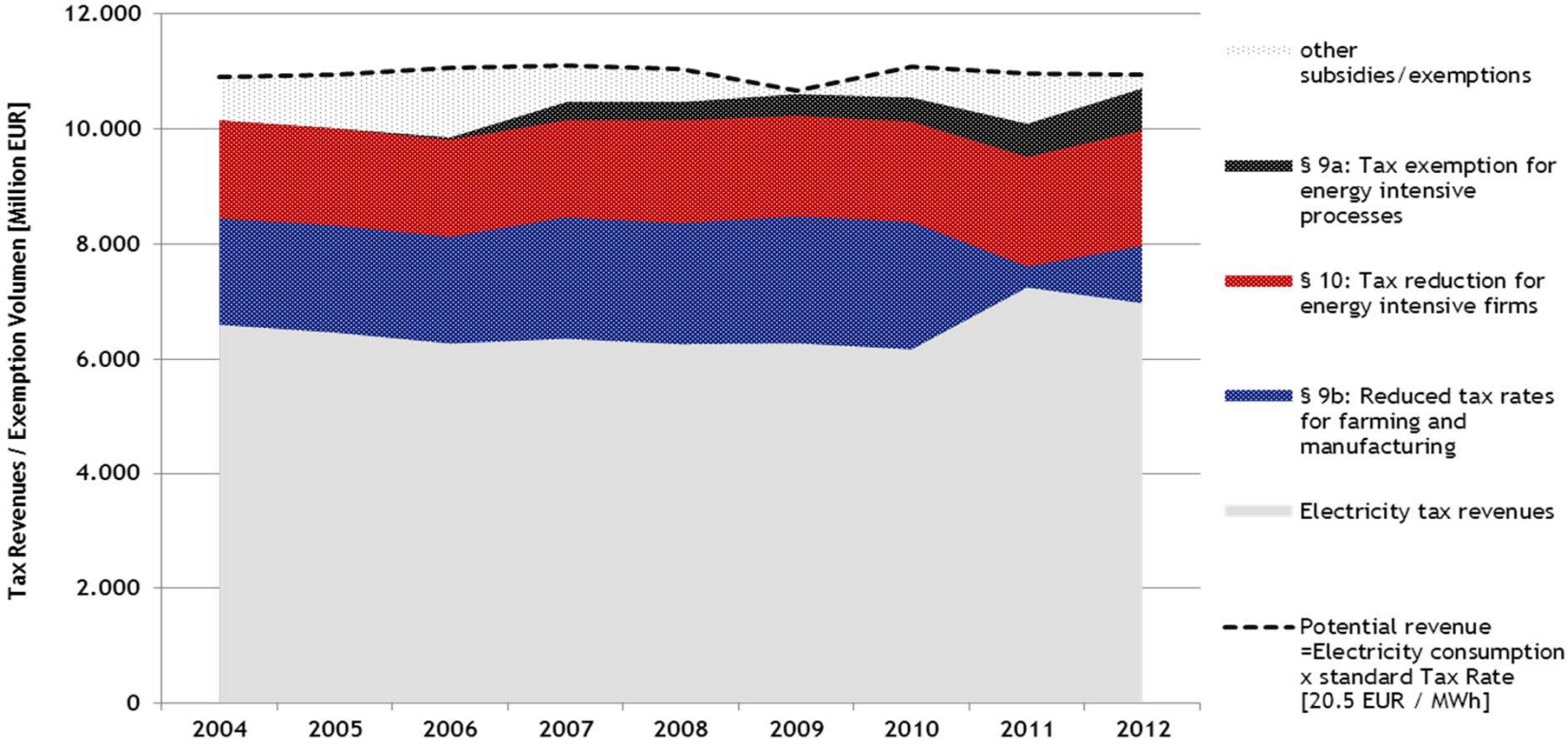
Narrow base / high elasticity



Source: Own figure based on (OECD 2014b) calculated with the assumption of a stable populace

EFR exemptions & reductions decrease revenues and invite political interference

Figure 2: German Electricity Tax revenues and the value of exemptions and reductions



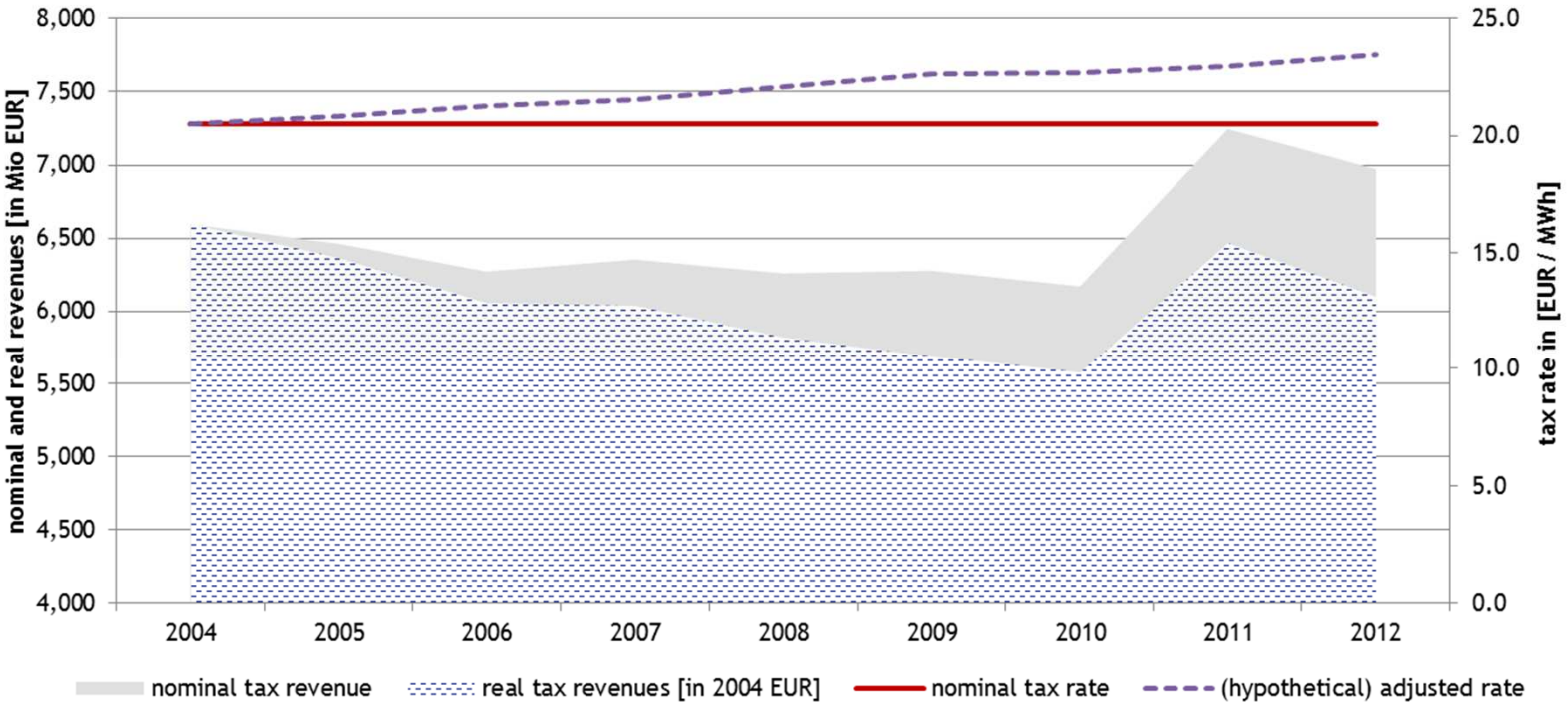
Source: Own graph based on (BDEW, 2014; Bundesregierung, 2013)

External revenue effects could decrease or increase overall revenues

- **External revenue effects can be either positive or negative**
  - Example: Broad base air travel tax on CO_2
    - » Declining air travel → decreasing revenues from air travel and payroll taxes
    - » Profits decrease due to higher fuel taxes → lower tax base for profit taxes
    - » On the other hand: possibly rise due to tax revenues from domestic tourism and increasing revenues in other transport sectors which pay higher environmental taxes
- **Effect of environmental tax on productivity:**
  - Decreasing productivity by forcing companies to use less effective technology in production → negative effect on revenues
  - But: if pollution has negative effects on health and labor productivity, an environmental tax could increase productivity
- **Efficiency of pre-existing tax programs**
  - Using EFR revenues to lower other more distortive taxes → increases tax base of these other distortive taxes since Laffer curve peak had been surpassed
  - improve in efficiency of overall tax system and thus the revenue potential

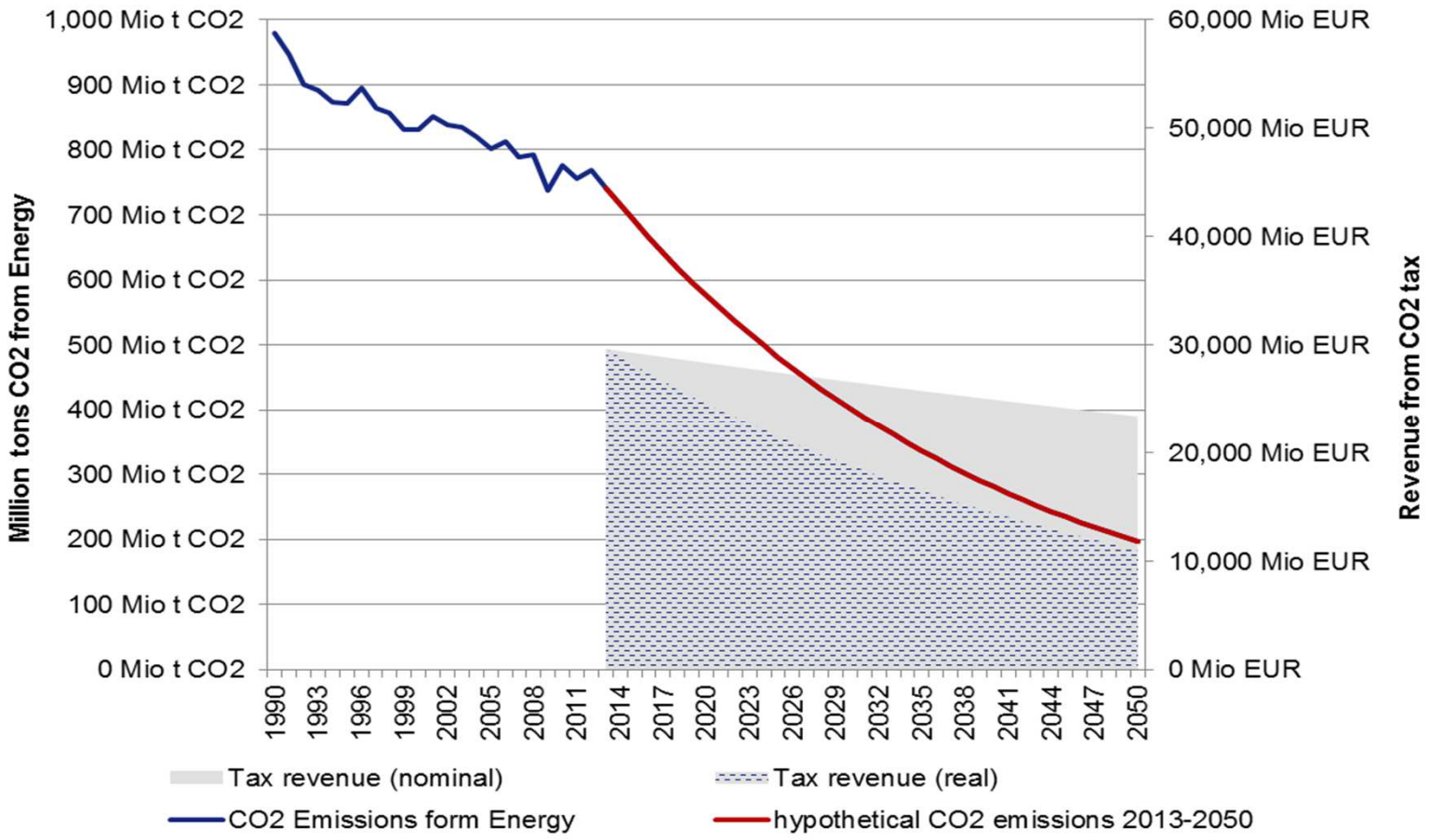
Inflation decreases the real value of quantity taxes

German electricity consumption and electricity tax revenue development 2004-2010



Source: Own graph and calculations

As behavioral responses increase over time, the tax base tends to shrink: Hypothetical tax on CO_2



EFR generally have very low administrative costs

- **Administrative efficiency= Administration costs/revenue**

- Costs include:
  - Assessment costs
  - Payment & collection costs (to taxpayers and bureaucracy)
  - Monitoring & enforcement costs

- Case EFR in Germany: Use existing structures and collect taxes upstream
  - Not much additional administration required, synergies can be used
  - Not many institutions/persons to collect the taxes from

- Germany: Administrative costs of the EFR comprise just 0.13% of the revenue raised – this is a very low cost compared to other taxes

Compensatory spending may be necessary to implement EFR

- Compensatory spending here is defined as the **amount of spending, which is necessary to obtain sufficient political support for EFR** → conceptual idea

- To analyze possible compensatory spending, it is necessary to determining who is economically affected by EFR and to what extent

- Compensatory spending is often necessary due to **equity considerations**

- **(Price-independent) compensation** is better than subsidies through exemptions and reduction e.g. Sweden NO_x refund scheme, because the incentives for reductions are much better kept upright

Potential Question for discussion

- **Which EFR revenues are the best from a revenue perspective and which only from an environmental point of view?**

Examples:

- Packaging taxes
- Automobile taxes
- Road user fees
- Energy taxes on fuel
- Carbon tax

Thank you very much for your attention!

I am very grateful to my co-author Amani Joas,

but also to Jacqueline Cottrell, Swantje Küchler, Jan Allmann and Oliver Grob from FÖS/GBG who very much supported me in writing the paper and drafting this presentation.

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