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# Environmental Taxation in the 2020s: Promises and Constraints

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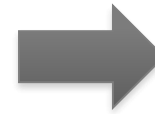
FSR Climate Annual Conference  
29 November 2021

# My objectives today

- ❑ **Environmental taxation: such a powerful instrument...**
- ❑ **that has not lived up to expectations**
- ❑ **A Spanish illustration**
- ❑ **Still, totally necessary for the ‘ecological transition’**
- ❑ **How to proceed?**

## ■ Such a powerful instrument:

- ❑ Incorporate environmental damages (PPP)
- ❑ Cost-effectiveness
- ❑ Salience
- ❑ Promote investment and innovation
- ❑ Public revenues:
  - Extra dividends?
  - Environmental push
  - Compensations



**Facilitate  
Transition**

ORIGINAL CO-SIGNATORIES INCLUDE

- 4 Former Chairs of the Federal Reserve (All)
- 27 Nobel Laureate Economists
- 15 Former Chairs of the Council of Economic Advisers
- 2 Former Secretaries of the U.S. Department of Treasury

[Economists' Sign-On Form](#)

## ECONOMISTS' STATEMENT ON CARBON DIVIDENDS

Global climate change is a serious problem calling for immediate national action. Guided by sound economic principles, we are united in the following policy recommendations.

- I. A carbon tax offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. By correcting a well-known market failure, a carbon tax will send a powerful price signal that harnesses the invisible hand of the marketplace to steer economic actors towards a low-carbon future.
- II. A carbon tax should increase every year until emissions reductions goals are met and be revenue neutral to avoid debates over the size of government. A consistently rising carbon price will encourage technological innovation and large-scale infrastructure development. It will also accelerate the diffusion of carbon-efficient goods and services.
- III. A sufficiently robust and gradually rising carbon tax will replace the need for various carbon regulations that are less efficient. Substituting a price signal for cumbersome regulations will promote economic growth and provide the regulatory certainty companies need for long-term investment in clean-energy alternatives.
- IV. To prevent carbon leakage and to protect U.S. competitiveness, a border carbon adjustment system should be established. This system would enhance the competitiveness of American firms that are more energy-efficient than their global competitors. It would also create an incentive for other nations to adopt similar carbon pricing.
- V. To maximize the fairness and political viability of a rising carbon tax, all the revenue should be returned directly to U.S. citizens through equal lump-sum rebates. The majority of American families, including the most vulnerable, will benefit financially by receiving more in "carbon dividends" than they pay in increased energy prices.

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## Endorse the Economists' Statement on Carbon Pricing by signing it!

*The Policy Outreach Committee (POC) of the European Association of Environmental and Resource Economists (EAERE) prepared a statement on carbon pricing to be proposed for endorsement to the whole community of economists in Europe and worldwide. The statement has already been signed by all POC members and all EAERE Council. It aims to convey the European perspective on carbon pricing and to draw the attention of policy-makers to its importance as a key instrument, even though not the only one, to achieve the future de-carbonization targets.*

 [Sign here](#)

 [Download the statement](#)

 [Read the Press Release](#)

 [Read the FT article](#)

## Economists' Statement on Carbon Pricing

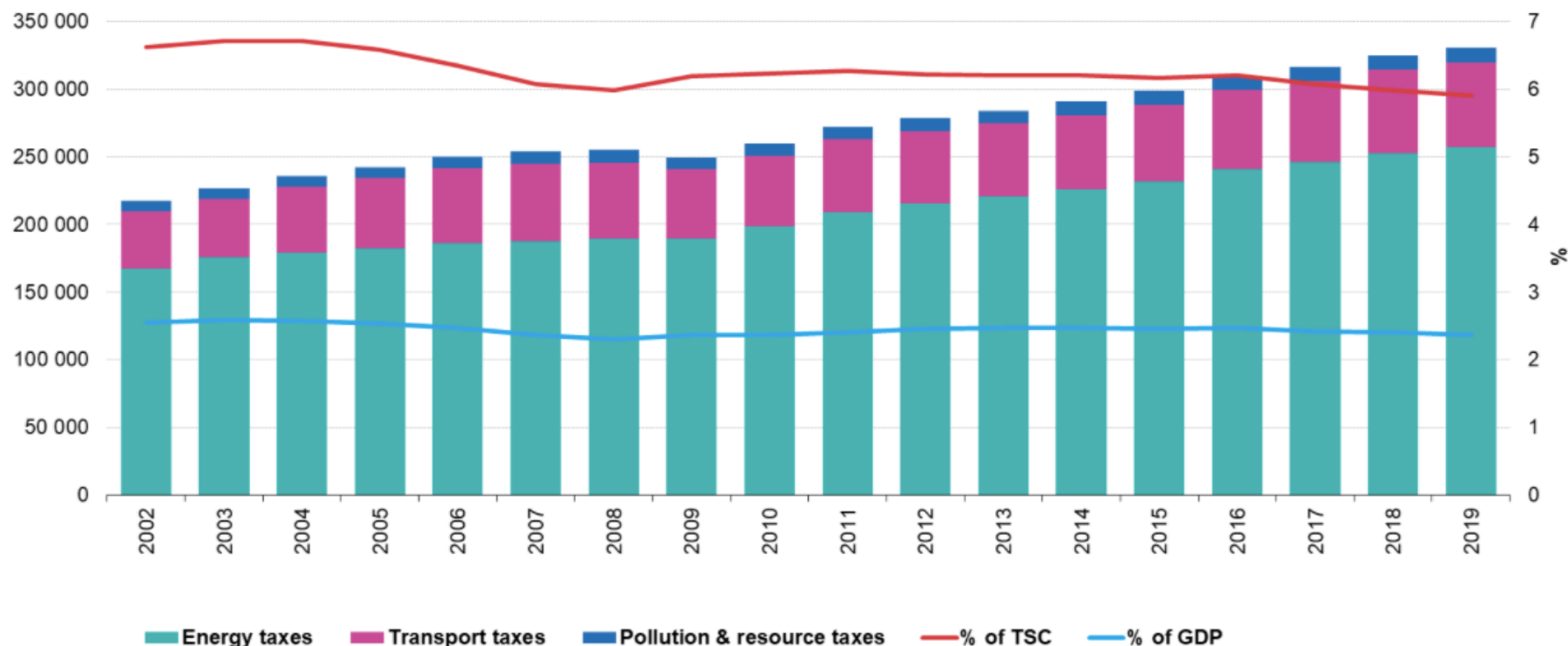
"Global climate change is a serious problem calling for immediate and ambitious action. Guided by sound economic principles, we are united in the following policy recommendations:

1. A price on carbon offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. By correcting a well-known market failure, a carbon price sends a powerful signal, steering economic actors towards a low-carbon future. This encourages technological innovation, large-scale infrastructure development, as well as the diffusion of carbon-efficient goods and services.
2. Action should be taken to ensure that the price on carbon gradually increases until the goals of the Paris Agreement are met. A sufficiently robust price on carbon reduces the need for less efficient policies and provides the regulatory certainty companies need for long-term investment in clean-energy alternatives. A carbon price can be set through a tax or an emissions trading system.
3. The European Union has established an Emissions Trading System (ETS) covering the energy and manufacturing sectors, as well as intra-European aviation. To improve the effectiveness of the ETS, the cap needs to be tightened further while the share of auctioned permits should be increased. To safeguard competitiveness, a border carbon adjustment system could be considered in a multilateral context.
4. In parallel to the EU ETS, a carbon tax should be adopted to reduce the greenhouse gas emissions in transport and housing. In particular, the tax exemption of the international aviation and maritime sectors needs to be addressed.

# that has not lived up to expectations

## Environmental tax revenue by type and total environmental taxes as share of TSC and GDP, EU-27, 2002-2019

(billion EUR and % TSC and GDP)

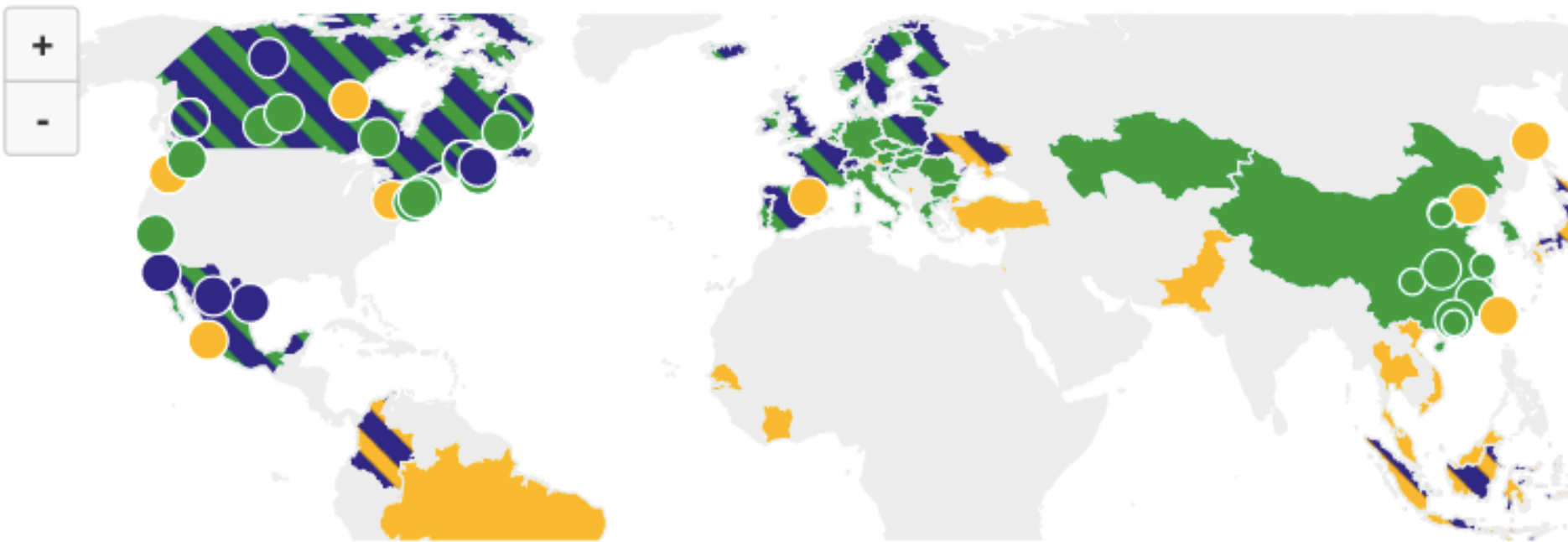


Source: Eurostat (online data codes: env\_ac\_tax, gov\_10a\_taxag)

eurostat 

Universidade de Vigo

## Summary map of regional, national and subnational carbon pricing initiatives



- ETS implemented or scheduled for implementation
- Carbon tax implemented or scheduled for implementation
- ETS or carbon tax under consideration
- ETS and carbon tax implemented or scheduled
- ETS implemented or scheduled, ETS or carbon tax under consid...
- Carbon tax implemented or scheduled, ETS under consideration

# A Spanish illustration

- ❑ All in favor: academic evidence, high energy dependence, growing emissions, public deficits
- ❑ Fiscal approaches in the great recession
- ❑ A research puzzle:

An Integrated Economic and Distributional Analysis of Environmental Policies

Xavier Labandeira, José M. Labeaga, Miguel Rodríguez  
*Energy Policy*, 37 (2009): 5776-5786

Transport and Low-carbon Fuel: A Study of Public Preferences in Spain

María Loureiro, Xavier Labandeira, Michael Hanemann  
*Energy Economics*, 40 (2013): S126-S133

# Barriers:

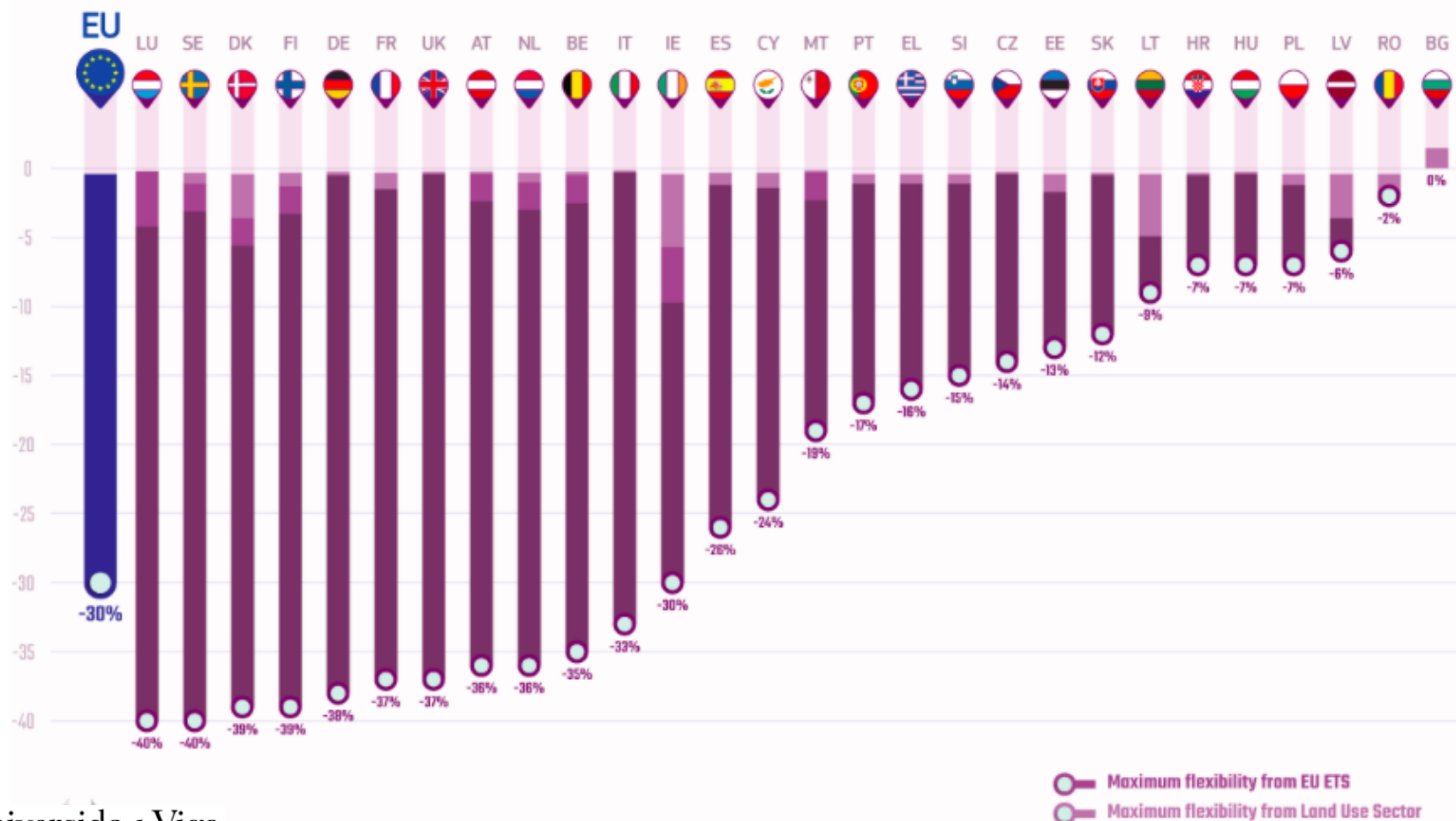
- ❑ Stakeholders perceptions
- ❑ Distribution and competitiveness

## Still, totally necessary:

- ❑ *Effort-sharing objectives for GHG emissions*
- ❑ *Energy efficiency targets*
- ❑ *Complement existing GHG pricing*
- ❑ Circular economy objectives
- ❑ Water pollution and use



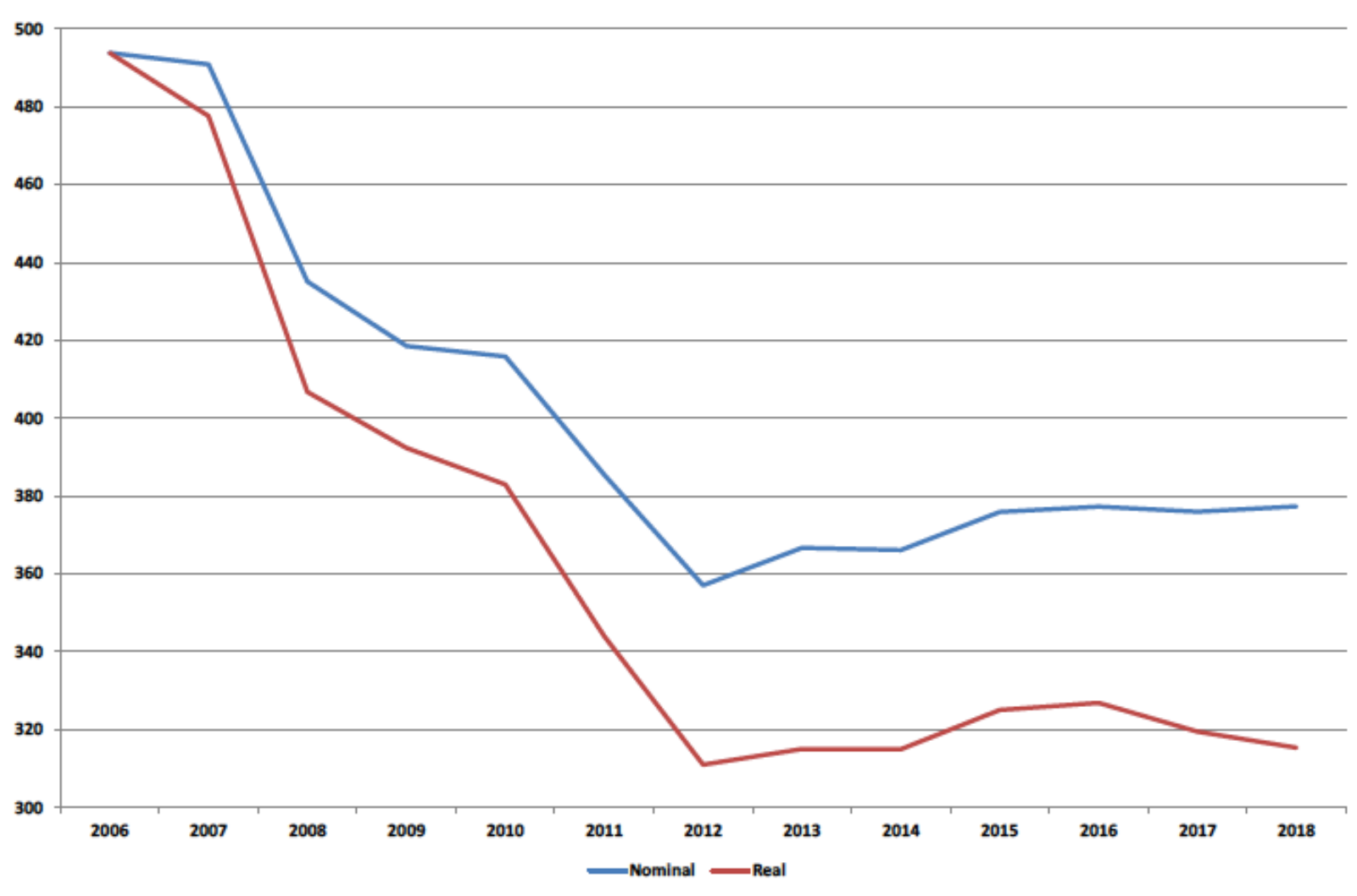
## Member State specific emission reduction targets for 2030 compared to 2005, for sectors outside the EU Emissions Trading System including new flexibilities for reaching those targets



# Externalities associated to transport

| Type          |        | Paper                     | Year | Country                    | % GDP             |
|---------------|--------|---------------------------|------|----------------------------|-------------------|
| Congestion    |        | Delucchi (1997)           | 1991 | U.S.                       | 0.55- <b>2.36</b> |
|               |        | Winston and Langer (2006) | 1996 | U.S.                       | 0.32              |
|               |        | Van Essen et al. (2011)   | 2008 | EU, Norway and Switzerland | 1.10-1.80         |
|               |        | Cravioto et al. (2013)    | 2006 | Mexico                     | 1.04-1.05         |
|               |        | BITRE (2015)              | 2010 | Australia                  | 0.94              |
|               |        | BITRE (2015)              | 2015 | Australia                  | 1.13              |
|               |        | Schrank et al. (2015)     | 1982 | U.S.                       | 0.59              |
|               |        | Schrank et al. (2015)     | 2014 | U.S.                       | 0.92              |
|               |        | Keller (2018)             | 2015 | Switzerland                | <b>0.29</b>       |
| Air Pollution | Local  | DMT (2004)                | 2000 | Denmark                    | <b>0.15</b>       |
|               |        | Fisher et al. (2007)      | 2001 | New Zealand                | 0.24              |
|               |        | Van Essen et al. (2011)   | 2008 | EU, Norway and Switzerland | 0.39              |
|               |        | Cravioto et al. (2013)    | 2006 | Mexico                     | 0.61-0.62         |
|               |        | OECD (2014)               | 2010 | OECD                       | <b>1.97</b>       |
|               |        | Guo et al. (2010)         | 2004 | China                      | 0.52              |
|               |        | Guo et al. (2010)         | 2008 | China                      | 0.58              |
|               | Global | DMT (2004)                | 2000 | Denmark                    | <b>0.11</b>       |
|               |        | Van Essen et al. (2011)   | 2008 | EU, Norway and Switzerland | 0.97              |
|               |        | Cravioto et al. (2013)    | 2006 | Mexico                     | 0.99- <b>1.00</b> |
|               |        | Ivkovic et al. (2018)     | 2013 | Serbia                     | 0.20              |
|               | Total  | GEA (2018)                | 2008 | Germany                    | <b>1.93</b>       |
|               |        | GEA (2018)                | 2014 | Germany                    | <b>1.78</b>       |
| Accidents     |        | López et al. (2004)       | 1997 | Spain                      | 1.35              |
|               |        | DMT (2004)                | 2000 | Denmark                    | <b>0.49</b>       |
|               |        | Van Essen et al. (2011)   | 2008 | EU, Norway and Switzerland | <b>1.75</b>       |
|               |        | Cravioto et al. (2013)    | 2006 | Mexico                     | 1.32-1.34         |
|               |        |                           |      |                            |                   |
| Noise         |        | DMT (2004)                | 2000 | Denmark                    | <b>0.65</b>       |
|               |        | Van Essen et al. (2011)   | 2008 | EU, Norway and Switzerland | <b>0.13</b>       |
|               |        | Cravioto et al. (2013)    | 2006 | Mexico                     | 0.42-0.43         |

# ■ Tax revenue per vehicle, Spain (Euro)



# How to proceed

- ❑ **One size fits all? Attention to policy context**
- ❑ **Interactions with other policy approaches**
  - **Avoid duplications/extra costs**
  - **Facilitate the operation of environmental taxes**
- ❑ **Interest and needs beyond energy/climate**
- ❑ **Tax innovation: transport**
- ❑ **Distributional and competitiveness ompensations**



## How to protect our transition to a decarbonized society?

28th June 2021

A post by **Xavier Labandeira** (University of Vigo), member of the **Core Expert Group** of the project **LIFE DICET**

In recent weeks it has become clear that the road to decarbonization of our economies will not be an easy one. Despite the fact that the population of advanced countries is increasingly concerned about the problems of climate change, protests are multiplying against the increase in energy prices brought about by climate policies. Additionally, in some places, the accelerated expansion of renewables is beginning to be discussed. The phenomenon is widespread: as an example, the recent negative result of the Swiss referendum on the climate change law, supported by almost all political forces. Although there are many factors that explain the disparity between the desires and practices of the population, distributive issues (who, apparently, benefits and who bears the costs of the transition) undoubtedly play a fundamental role.

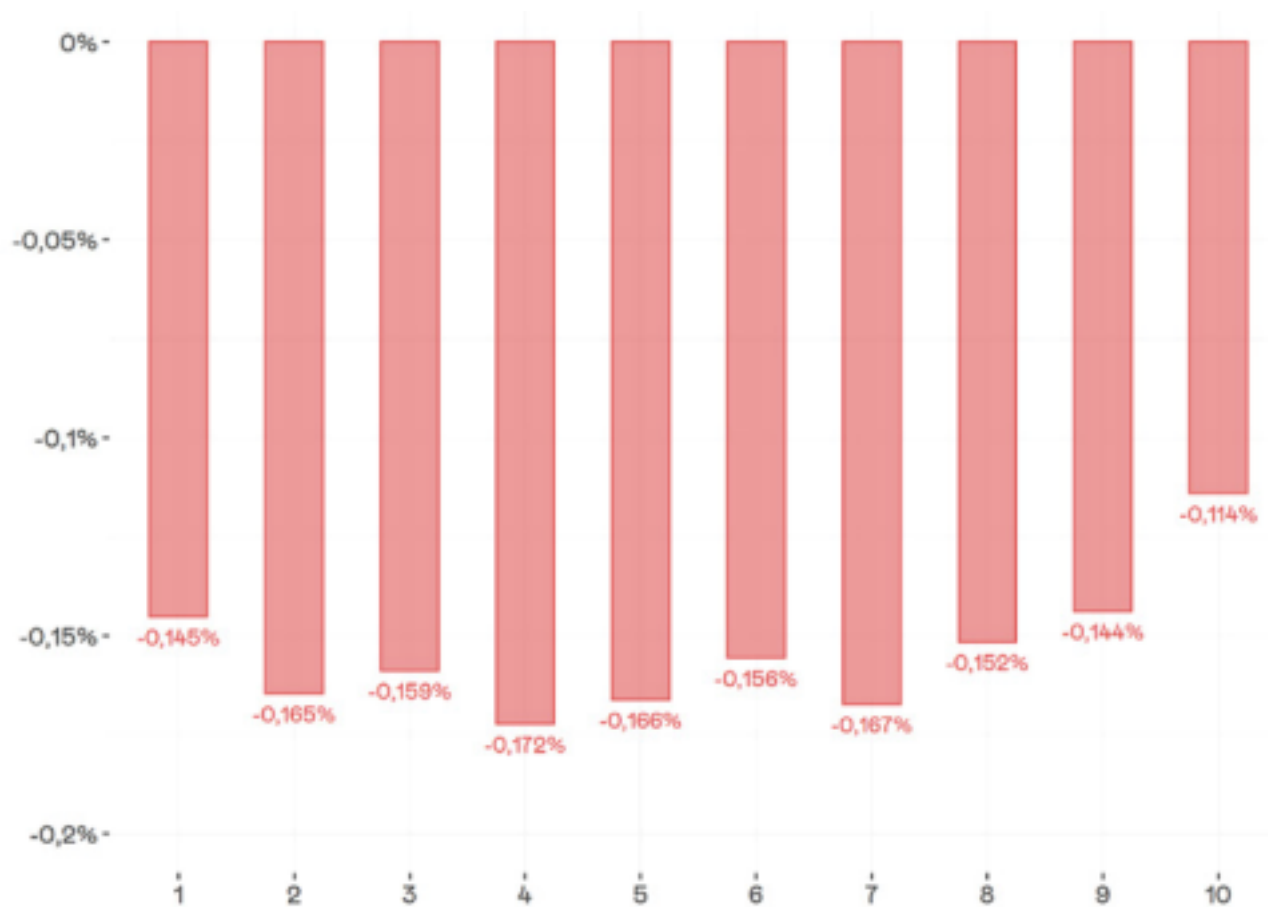
- **Distributional and competitiveness compensations**
  - (a wider approach?)
  - Per capita distribution
  - By income level, household characteristics, sector, etc.
  - Subsidies to change stock

Transport Taxes and Decarbonization in Spain: Distributional Impacts and Compensation

Alberto Gago, Xavier Labandeira, José M. Labeaga, Xiral López-Otero

*Hacienda Pública Española. Review of Public Economics*, 236: 101-136 (2021)

## ■ Distributional impacts of increasing diesel taxation



## ■ Distributional compensations: First deciles only





## ■ Distributional compensations: stock

| Decila | Coche nuevo | Coche usado | Total  |
|--------|-------------|-------------|--------|
| 1      | 0,08%       | 3,33%       | 3,42%  |
| 2      | 0,12%       | 3,37%       | 3,49%  |
| 3      | 0,51%       | 4,94%       | 5,34%  |
| 4      | 0,65%       | 4,75%       | 5,40%  |
| 5      | 1,32%       | 5,46%       | 6,78%  |
| 6      | 3,84%       | 5,88%       | 9,63%  |
| 7      | 4,81%       | 6,21%       | 10,78% |
| 8      | 8,44%       | 5,34%       | 13,56% |
| 9      | 8,53%       | 7,06%       | 15,47% |
| 10     | 17,79%      | 5,82%       | 23,12% |

# Main messages

- ❑ Environmental taxes are likely to play a bigger role due to ambitious environmental objectives
- ❑ Their application are likely to be more widespread, although transport will remain a major target
- ❑ Distributional and competitiveness (targeted) compensations will be part of the tax reform scheme
- ❑ Yet, the general advice on their superiority for environmental policies is contingent on the area of application, existing policies and needs prioritization

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# Thanks

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