

# **Public preferences for climate change policies: Exploratory evidence from Spain**

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# Motivation

- Climate change has become a major concern for many people around the world.
- The Eurobarometer Survey (2009) found 62% feel that “global warming / climate change” also is among the most serious problems in Europe.

# Objectives

- The current study evaluates preferences in Spain for a specific green electricity program that reduces GHG emissions while increasing electricity prices for an interim period.
- Attitudinal questions are used to explore preference heterogeneity.

# Questionnaire

- Our study employs a survey to assess preferences towards climate change mitigation policies in Spain.
  - To develop the survey focus groups were conducted in several Spanish cities. Focus groups were held first in two Galician cities, A Coruña and Santiago de Compostela, and Madrid.
  - Face-to-face surveys conducted in June 2010 in a sample of 700 representative households in Spain.

# Questionnaire Format

- Introductory warm-up type of questions
- Valuation Scenario
  - Two programs: electricity & private transportation
- Socio-demographics
- Attitudinal Questions

# Introductory Questions

- **How serious do you think the problem of climate change is?**
  - Very serious problem: 77.28%
  - Serious but currently exaggerated: 17.14%
  - Somewhat serious/not serious: 5.58%

# VALUATION SCENARIO: ELECTRICITY PROGRAM

- The electricity we use in our homes and factories is the single largest source of greenhouse gas emissions in Spain. This accounts for 28% of Spain's greenhouse gas emissions.
- The Spanish government is considering a balanced program to reduce the energy we use in our homes and factories. This program includes the requirement for power companies to make electricity in ways that don't put out greenhouse gases, such as with renewable energy. Also, the government will require factories to use highly efficient energy equipment, and to make products which meet climate requirements. The government will continue to regulate the price of electricity for households, so that electricity companies cannot gain excess profits.
- In the end, this program will make electricity less expensive to produce, but for an initial period of a few years, the price of electricity will be higher. In the long run, cleaner technologies and higher energy efficiency will make the cost of living lower and electricity less expensive.

# ELECTRICITY POLICY VALUATION

If the government goes ahead with this program, the extra cost to your household is likely to be \$**X** or per month (or **X** per year) until about 2020. Would you be in favour of this program, or opposed to it, or do you not have an opinion?

- Mean WTP/Household/Month=€4.6
- Mean WTP/Household/Year=€55.2

# Attitudinal Questions

How willing are you to reduce your standard of living in order to reduce GHG emissions?  
Would you say that you are

	%
Very willing to reduce your standard of living	35,57
Somewhat willing	41,54
Somewhat unwilling	11,69
Very unwilling	8,96
D.K.	1,24
No answer	1,00

# Attitudinal Questions

Since the main effects of climate change will not be felt in Spain until about 50 years from now, how necessary is it to take actions to control greenhouse gas emissions today?

It is

	%
Absolutely necessary to take action to control emissions today	62,44
<u>S</u> omewhat necessary to take actions today	28,36
Somewhat unnecessary	3,23
Absolutely unnecessary	1,74
D.K.	3,48
No answer	0,75

# Attitudinal Questions

It is cheaper to clean up greenhouse gas emissions from factories in developing countries than from factories in Spain. Therefore, it is better that, to comply with the Kyoto protocol limits on their emissions, Spanish companies spend their money:

	%
Reducing emissions in Spain only	8,21
Mainly reducing emission in Spain	26,62
Reducing emissions in both, Spain and developing countries	47,51
Mainly in developing countries	5,97
Only in developing countries	0,50
D.K.	7,71
No answer	3,48

# Attitudinal Questions

The government does not know better than the market and therefore should not be in the position of telling firms what to produce, for example, what type of cars or refrigerators they can or cannot sell.

	%
Strongly agree	15,17
Agree	17,66
Neither agree nor disagree	9,95
Disagree	16,67
Strongly disagree	33,08
D.K.	5,72
No answer	1,74

# Attitudinal Questions

The best way for the rich countries of the world to help the developing countries with climate change is not to force them to limit their emissions today but rather to help them grow economically so that they can control their emissions once they become rich.

	%
Strongly agree	27,11
Agree	27,11
Neither agree nor disagree	11,19
Disagree	7,71
Strongly disagree	12,94
D.K.	8,46
No answer	5,47

# Proposed model

- X observable demographic variables
- Z unobservable variables
- A attitudinal responses
- Y WTP response

↗ A

- Z, X Estimate jointly integrating out Z, treating Z as random

↘ Y

# Findings

- Our results corroborate other findings in the literature. They show a clear concern about climate change and a significant WTP to reduce GHG emissions.
- People are willing to pay on average about 55€/household to prevent climate change impacts.

# Recent Stanford Study in US (Krosnick)

- Do you personally think that the earth's temperature has been going up slowly over the past 100 years?
  - 2007 84% said yes
  - 2008 80% said yes
  - 2010 74% said yes
  - The decline is attributable to perceptions of a cold winter last winter.
- Do you think this is caused mostly by human behavior?
- 75% said yes

# US survey: Krosnick 2010, continued

- 86% want the federal government to limit the amount of air pollution emit by firms
- 76% favor the federal government's limiting greenhouse gas emissions by firms
  
- 78% oppose tax on electricity to lower use
- 72% oppose tax on gasoline to lower use
- 84% favor tax break for renewable power
- 81% favor tax break to more efficient cars
- 80% favor tax break for more efficient appliances
- 80% favor tax break for more efficient homes/buildings

# US survey: Krosnick 2010, continued

- 18% think that policies to reduce global warming will increase unemployment.
- 20% think that policies to reduce global warming will hurt the nation's economy.
- 14% think the US should not take action to combat global warming unless other major industrial countries like China and India do so.