Assessing Public Support for an International Climate Treaty Including Willingness-to-Pay in the United States & China 2015/2017

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Introduction

Climate change is the most important environmental/societal issue facing our world today. Because of the global causes/consequences of climate change, international cooperation is essential in developing, implementing and financing successful mitigation policy actions. Public support around the world will likely be a significant determining factor regarding if/when climate change mitigation policies are enacted. Moreover, China and the United States are central to international policy negotiations because they are the world’s two largest economies and also the largest greenhouse gas (GHG) polluters. Using data described in our previous poster, we assess support for an international climate treaty among citizens in China and the U.S. Additionally, there will be significant costs associated with undertaking global climate change mitigation policies. Thus, we also explore the degree to which citizens in these two important countries are willing to pay these increased costs in the context of a higher cost of living.

Two randomized questions were used to explore Chinese and American support for an international climate treaty. One question was unconditional, while the other was conditional on knowing the other country would not participate. To investigate Chinese and American willingness-to-pay for climate policy action to reduce GHG emissions, we employ a double-bounded dichotomous choice contingent valuation framework with purchasing power parity (PPP).

International Treaty Question

2015 International Treaty Question:
Government leaders from around the world will meet in Paris, France in November, 2015 to negotiate a new international treaty to limit greenhouse gas emissions. Government leaders from around the world will meet in Paris, France in November, 2015 to negotiate a new international treaty to limit greenhouse gas emissions. How much do you support/endorse United States signing such a treaty to commit to reducing its greenhouse gas emissions?

2017 International Treaty Question:
In 2016, government leaders from around the world, including China and the United States, ratified a new international treaty to limit greenhouse gas emissions in order to avoid the most dangerous impacts of climate change/global warming. In 2016, government leaders from around the world, including China and the United States, ratified a new international treaty to limit greenhouse gas emissions in order to avoid the most dangerous impacts of climate change/global warming. How much do you support/endorse United States fulfilling their commitment to limit greenhouse gas emissions through this international treaty?

Results from these questions are presented graphically in the figures below including statistical tests of differences in means between conditional and unconditional support in each country in each year.

Graphical & Statistical Analysis

United Nations Framework Convention on Climate Change

PARIS2015 COP21 CAF11

2015 US Support for CC Treaty

2015 CH Support for CC Treaty

Unconditional vs. Conditional (CH Known Non-Participant)

2017 US Support for CC Treaty

2017 CH Support for CC Treaty

Unconditional vs. Conditional (CH Known Non-Participant)

2015 US Support for CC Treaty

2015 CH Support for CC Treaty

Unconditional vs. Conditional (CH Known Non-Participant)

2017 US Support for CC Treaty

2017 CH Support for CC Treaty

Unconditional vs. Conditional (CH Known Non-Participant)

Willingness-to-Pay Question

2015 Willingness-to-Pay Question:
Most policies to address climate change are designed to reduce greenhouse gas emissions which will likely increase your household expenditures on heating, electricity, transportation, food and other goods and services. Most policies to address climate change are designed to reduce greenhouse gas emissions which will likely increase your household expenditures on heating, electricity, transportation, food and other goods and services. Would you support a policy to address climate change that increased your average monthly household expenditures by 5%?

2017 Willingness-to-Pay Question:
In order to make progress toward avoiding the most dangerous impacts of climate change/global warming, scientists have estimated that global greenhouse gas emissions need to be reduced by approximately 20% by the year 2030. In order to make progress toward avoiding the most dangerous impacts of climate change/global warming, scientists have estimated that global greenhouse gas emissions need to be reduced by approximately 20% by the year 2030. Would you support a policy to reduce greenhouse gas emissions by approximately 20% by the year 2030 if it increased your average monthly household expenditures by 5%?

Analysis of Initial Bid Acceptance

Full Sample WTP Initial Bid Acceptance 2015

Full Sample WTP Initial Bid Acceptance 2017

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Money | 0.058 (0.020) | 0.059 (0.020) | 0.059 (0.020) | 0.059 (0.020)
CC Score | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000)
Soil | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000)

Probit Regression Results

Probit Regression Model

Discrete Binomial Dependent Variable

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Willingness to Pay

Mean Willingness-to-Pay

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Constant | 57.61*** | 128.21*** | 72.68*** | 146.89***
N | 4,905 | 2,395 | 2,633 | 4,948

Note: PPP International $

Conclusion & Discussion

• Significant withdraw of Chinese and American support conditional on non-reciprocity

• Chinese show significantly higher mean WTP compared to Americans (PPP)

• Higher mean WTP in both countries in 2017 compared to 2015

Would you support a policy to reduce greenhouse gas emissions by approximately 20% by the year 2030 if it increased your average monthly household expenditures by 5%?

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