ONLINE APPENDIX — YELLOW VESTS, PESSIMISTIC BELIEFS, AND CARBON TAX AVERSION

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A Raw data

Table A.1: Sample characteristics: quotas.

	Population	Sample
Sex		
woman	*0.52*	0.53
man	*0.48*	0.47
Age		
18-24	*0.12*	0.11
25-34	*0.15*	0.11
35-49	*0.24*	0.24
50-64	*0.24*	0.26
>65	*0.25*	0.27
Profession		
farmer	*0.01*	0.01
independent	*0.03*	0.04
executive	*0.09*	0.09
intermediate	*0.14*	0.14
employee	*0.15*	0.16
worker	*0.12*	0.13
retired	*0.33*	0.33
inactive	*0.12*	0.11
Education		
No diploma or *Brevet*	*0.30*	0.24
CAP or *BEP*	*0.25*	0.26
Bac	*0.17*	0.18
Higher	*0.29*	0.31
Size of town		
rural	*0.22*	0.24
<20k	*0.17*	0.18
20-99k	*0.14*	0.13
>100k	*0.31*	0.29
Paris area	*0.16*	0.15
Region		
IDF	*0.19*	0.17
Nord	*0.09*	0.10
Est	*0.13*	0.12
SO	*0.09*	0.09
Centre	*0.10*	0.12
Ouest	*0.10*	0.10
Occ	*0.09*	0.08
ARA	*0.12*	0.13
PACA	*0.09*	0.08

Table A.2: Household characteristics.

	Population	Sample
Household composition (mean)		
Household size	*2.36*	2.38
Number of adults	*2.03*	1.93
Number of c.u. (consumption units)	*1.60*	1.61
Energy source (share)		
Gas	*0.42*	0.36
Heating oil	*0.12*	0.09
Size of accommodation (m^2)		
mean	*97*	96
p25	*69*	66
p50	*90*	90
p75	*120*	115
Distance travelled by car (km/year)		
mean	*13,735*	15,328
p25	*4,000*	4,000
p50	*10,899*	10,000
p75	*20,000*	20,000
Fuel economy (L/100 km)		
mean	*6.39*	7.18
p25	*6*	5
p50	*6.5*	6
p75	*7.5*	7

SOURCES: Matched BdF, except for number of adults (ERFS) and heating oil (CEREN).

NOTE: After controlling the false discovery rate at 5%, *t*-tests reject that the sample mean is equal to the population mean for 12 of our 42 variables in Tables A.1 and A.2. Refer to Section 2.2.2.

B Notations

To improve the understanding of our specifications in the regression tables, we adopt consistent notations throughout the paper. For questions where possible answers are "Yes"/"No"/"PNR", we define two kinds of dummy variables: the default ones correspond to *not "No"* answers, and we place a dot on dummy variables for *"Yes"*. For example, acceptance is denoted by A while approval is denoted by $\dot{A}$. Furthermore, for questions that are asked several times, namely, acceptance and win/lose category, an exponent is added to specify the step at which the question is asked. Table B.1 describes these exponents and the notations corresponding to the different notions of gain that we use. We use uppercase for binary and lowercase for continuous variables, and Greek letters denote objective notions, with a hat for our estimation of gains and without for the true (unknown) ones. To provide another example, the broad notion of self-interest at the initial step, i.e., the belief that one does not lose, is denoted by G^0, and the strict belief that one wins with the tax & targeted dividend is denoted by $\dot{G}^T$.

Table B.1: Notations for the different reforms and for gain notions.

Step:	Initial	after information: 1		with Targeting
Variants:	–	Progressivity	Feedback	–
Exponent	0	P	F	T

Gain	Subjective	True	Estimated
Numeric	g	γ	$\widehat{\gamma}$
Binary	$\dot{G}\,(g>0)$, $G\,(g\geq 0)$	Γ	$\widehat{\Gamma}$

NOTE: Refer to Section 2.3.

C The use of official household survey data

The paper employs official survey data for two purposes: (*i*) computing the distribution of increases in fossil fuel expenditures and (*ii*) predicting the expected net gain of each respon-

dent based on their energy characteristics. Section C.1 presents the three official surveys from Insee (the French national statistics bureau) that we use. Section C.2 details the formulas needed to compute the value of the dividend and households' expected net gains from their expenditures. Section C.3 explains how by using two distinct surveys, we can obtain a simple formula to predict respondents' net gain simply based on their energy characteristics and then test the likelihood of making a correct prediction out-of-sample. Finally, Section C.4 displays the objective net gain of the policy by income decile to show that it is progressive.

C.1 Official household surveys from Insee

Consumer survey "Budget de Famille" The consumer survey (BdF 2011) is a household survey providing information on all households' revenues and expenditures, together with many sociodemographic characteristics. It was conducted in several waves from October 2010 to September 2011 on a representative sample of 10,342 French households. The main advantage of the BdF when studying the incidence of carbon taxation is that it reports expenditures on both housing and transportation energy. Housing energy expenses are determined from households' bills, and for most other goods, respondents report their expenditures over the past week. However, as explained in Douenne (2020), this data collection is problematic when examining the incidence of a tax on transportation energy since short-run fluctuations in consumption lead to overestimation of the heterogeneity in expenditures.

Transport survey "Enquête Nationale Transports et Déplacements" To overcome this limitation, the BdF is matched with the transport survey (ENTD 2008). The ENTD was conducted in several waves from April 2007 to April 2008 on a representative sample of 20,178 French households. It provides information on household characteristics, vehicle fleets and use over the past week, but most important, it provides information on the annual distances traveled with these vehicles. This last information enables us to recover the distribution of transport fuel expenditures without overestimating its spread. Such matching is not necessary for housing energy since it already represents consumption over long periods in the

BdF.

Housing survey "Enquête Logement" The housing survey (EL 2013) was conducted from June 2013 to June 2014 on a sample of 27,137 households in metropolitan France. It includes considerable information on households' characteristics, as well as their housing energy bills. The distribution of energy expenditures is very close to that of the BdF.

C.2 Formulas to compute monetary effects of carbon tax policy

To compute the monetary impact of a carbon tax increase on household h, we decompose current energy expenditures $E_h(\tau)$ as a product of current price $P(\tau)$ and current quantities consumed $Q_h(\tau)$, each being a function of the excise tax τ of which the carbon tax is a part:[1]

$$E_h(\tau) = P(\tau) Q_h(\tau)$$

Using a first-order approximation, we can then express small variations in expenditures as follows:

$$\frac{dE}{E}(\tau) = \frac{dP}{P}(\tau) + \frac{dQ}{Q}(\tau) \tag{1}$$

We can rewrite the variation in quantities as a function of the price variation:

$$\frac{dQ}{Q}(\tau) = e\frac{dP}{P}(\tau)$$

where $e = \frac{dQ_h}{dP} \cdot \frac{P}{Q_h}$ is the price elasticity of the energy good considered, which is assumed to be constant and identical across households. For all energy types, we can decompose the final price itself as follows:

$$P(\tau) = (p + i\tau)(1 + t)$$

where t is the value added tax (VAT) rate (assumed constant) that applies after excise taxes,

[1] The French carbon tax "Contribution Climat Energie" is a component of existing taxes on energy products: TICPE for transport and heating oils, and TICGN for natural gas.

i is the incidence of excise taxes on consumers (assumed constant), and $p+(i-1)\tau$ is the producer price as a function of τ.[2] When the carbon price changes so that the excise taxes vary from τ to some level τ', we therefore have the following:

$$\frac{\Delta P(\tau)}{P} = \frac{P(\tau') - P(\tau)}{P(\tau)} = \frac{(p+i\tau')(1+t) - (p+i\tau)(1+t)}{(p+i\tau)(1+t)} = \frac{i(\tau'-\tau)}{p+i\tau}$$

Thus, by carrying on the first-order approximation, we can express an increase in expenditures associated with a carbon price increase as follows:

$$\Delta E_h(\tau) = E_h(\tau)(1+e)\frac{\Delta P}{P} = E_h(\tau)(1+e)\frac{i(\tau'-\tau)}{p+i\tau} \tag{2}$$

We can replicate similar calculations to obtain the expected variations in the tax paid on energy by household h, ΔT_h. Starting from the expression for T_h—which is the sum of excise taxes and the VAT on the energy good—we have the following:

$$T_h(\tau) = Q_h(\tau)\left((1+t)\tau + t\big(p+(i-1)\tau\big)\right)$$

From this, we obtain the following:

$$\Delta T_h(\tau) = Q_h(\tau)\left(1+e\frac{i(\tau'-\tau)}{p+i\tau}\right)\left(t\big(p+(i-1)\tau'\big)+(1+t)\tau'\right) - Q(\tau)\left(t\big(p+(i-1)\tau\big)+(1+t)\tau\right) \tag{3}$$

Finally, the net gain of a household h from a tax & dividend is written as follows:

$$\gamma_h(\tau) = N_h^a \cdot \frac{\sum_h \Delta T_h(\tau)}{N^a} - \Delta E_h^{transport}(\tau) - \Delta E_h^{housing}(\tau) \tag{4}$$

where γ_h denotes its net gain from the policy, N_h^a is the number of adults receiving the dividend in this household, N^a is the total number of adults receiving it, and $\Delta E_h^{transport}$ ($\Delta E_h^{housing}$) is the increase in their expenditures on transport (housing) energy. From households' energy expenditures and making assumptions for the elasticities and tax incidence,

[2] Hence, p is the producer price when $\tau = 0$.

equations (2) to (4) enable us to obtain the value of dividends and the impact of the policy on households' purchasing power. We use equation (4) to estimate the biases and objective distribution of net gains in Section 3 and the customized feedback in Section 4.

When asked to estimate the impact of the policy on their own purchasing power, respondents simply had to make an estimation over:

$$\Delta E_h(\tau) = E_h(\tau)(1+e)\frac{\Delta P}{P}$$

where, for simplicity, ΔP was given for transport fuels, and $\frac{\Delta P}{P}$ was given for housing energy. Thus, they were not required to make any specific assumption about existing taxes or tax incidence but simply to estimate their consumption and price elasticity.

C.3 Predicting gains and losses

As explained in Section 2.3, to estimate respondents' bias and provide customized feedback on their win/lose category, we need to estimate the increase in their housing energy expenditures, $\Delta E_h^{housing}$, based on their energy characteristics. To do so, we use the housing survey *Enquête Logement* (EL 2013), which provides information on household expenditures on housing energy and many demographic and energy characteristics. It enables us to compute $\Delta E^{housing}$ and regress it on household characteristics. We can then use the coefficients obtained to compute $\widehat{\Delta E}^{housing}$ (and thus obtain $\widehat{\gamma}$) for any household. The specification we chose is as follows:

$$\Delta E_h^{housing} = \beta_0 + \beta_1 \chi_h^G + \beta_2 \chi_h^F + \beta_3 \sigma_h + \varepsilon_h \tag{5}$$

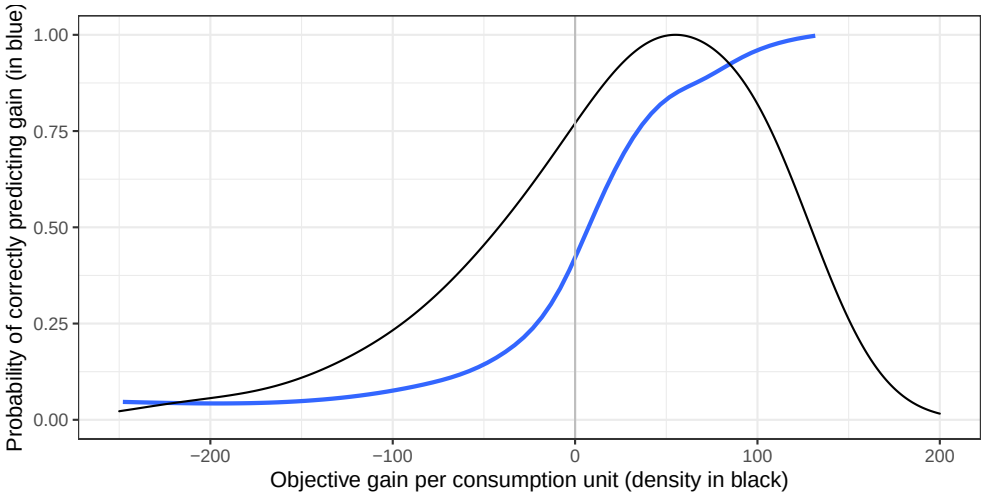
where χ_h^G (resp. χ_h^F) is a dummy variable equal to 1 if the household uses gas (res. heating oil) for heating and σ is the size of the household's accommodation in square meters. The results are provided in Table C.1 together with those of other specifications. The last row of the Table C.1 shows the out-of-sample error rate, computed with the consumer survey, as explained in Section 2.3. All specifications yield a similar error rate of 15-17%. Given the

concern that respondents could make mistakes when reporting their accommodation size in the entry field, we used the first specification in our survey since it does not rely as heavily as the others on the accommodation size. To balance the error rates for losing households that are mistakenly estimated to be winners and for winners who are mistakenly estimated to be losers, we add a constant of 16.1 in our estimation for the yearly net gain, which is thus the sum of 16.1 plus 110 times one or two (depending on the number of adults) minus increases in transport and housing energy expenditures. We selected the OLS as our prediction method for the estimation of the net gain because it compares well to alternative methods. We also classified winners and losers using a decision tree and obtained a very close error rate: 17.4%. Finally, statistical matching provided an error rate of 17.7%.

Table C.1: Determinants of housing energy expenditures.

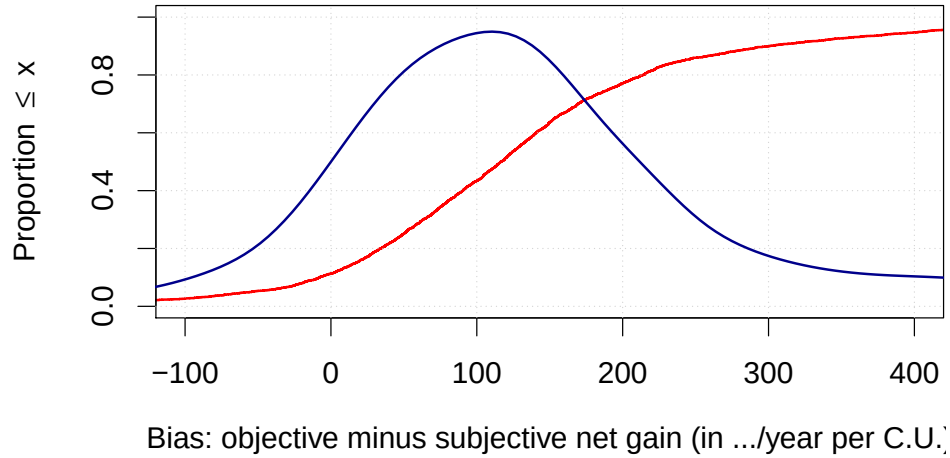
	Increase in housing energy expenditures (€/year)		
	(1)	(2)	(3)
Constant	−55.51		−0.634
	(1.237)		(1.489)
Housing energy: Gas	124.6		1.173
	(1.037)		(2.323)
Housing energy: Heating oil	221.1	129.8	130.4
	(1.719)	(3.752)	(4.002)
Accommodation size (m^2)	0.652		0.024
	(0.012)		(0.015)
Accommodation size × Gas		1.425	1.397
		(0.007)	(0.024)
Accommodation size × Heating oil		0.945	0.922
		(0.029)	(0.032)
Observations	26,729	26,729	26,729
R^2	0.545	0.716	0.599
Error rate	0.166	0.155	0.155

NOTE: The increase in energy expenditures is directly computed from households' energy bills in the housing survey, based on equation (2) in the Appendix C.2. See the discussion in the main text, Section 2.3.2.



NOTE: The black curve corresponds to the density of households' objective net gains in the consumer survey, and the blue curve corresponds to the probability that our net gain estimation correctly predicts the win/lose category. As shown by the blue curve, households in the consumer survey who would gain 100€ per c.u.—as directly computed from their energy bills—were predicted to be winners based on their energy characteristics in 96% of cases. See the discussion in the main text, Section 4.1.1.

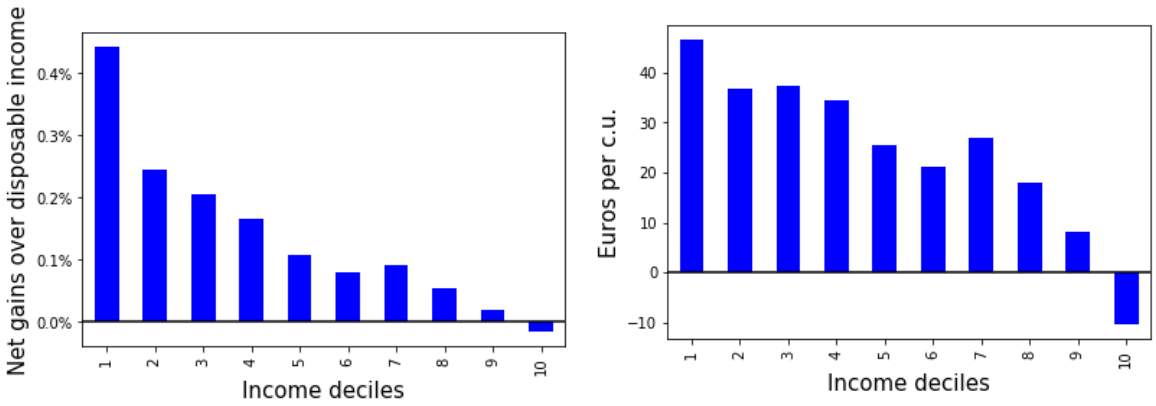
Figure C.1: Probability that our net gains estimation correctly predicts the win/lose category.



NOTE: The red curve indicates that for 11% of the respondents, their objective gains are lower than their subjective ones; meanwhile, for 23% of them, they are higher by at least 200€. The blue curve indicates that the most common bias is an underestimation of gains by approximately 100€. See the discussion in the main text, Section 3.1.

Figure C.2: CDF (in red) and PDF (in blue) of the bias.

C.4 Distributional effects



NOTE: Net gains are defined in equation (4). They correspond to the dividend minus the increase in expenditures (ΔE), not in taxes (ΔT). Although the latter would sum to zero when considering the population in aggregate because the reform is budget neutral, the former does not because fossil fuel expenditures adjust downwards following the increase in the carbon tax. See the discussion in the main text, Section 3.3.

Figure C.3: Average net gain of the carbon tax and dividend policy by income decile (computed using Insee data).

D Beliefs and persistence

D.1 Elasticities

To see how perceived elasticities relate to the perception of effectiveness, we run two separate regressions where the dependent variable E is equal to 0 if the respondent does not perceive the policy to be environmentally effective and 1 otherwise. In the first regression, we regress the perceived effectiveness on the perceived elasticity for housing; and in the second, we regress it on the perceived elasticity for transport energy. Table D.1 below reports the results with and without control variables. They all consistently indicate that perceived elasticities are correlated with beliefs about the policy's effectiveness since for both sectors a respondent anticipating an elasticity of -1 is (on average) 6 p.p. more likely to perceive the tax & dividend policy to be effective than one anticipating no elasticity. Although significant, the magnitude of the effect is modest, showing that the perceived ineffectiveness of tax instruments should not be attributed to small subjective elasticities.

Table D.1: Effect of subjective elasticities on perceived environmental effectiveness.

	Environmental effectiveness: not 'No'			
	(1)	(2)	(3)	(4)
Price elasticity: Housing	−0.062		−0.055	
	(0.032)		(0.032)	
Price elasticity: Transport		−0.056		−0.060
		(0.030)		(0.030)
Controls: Sociodemo, energy, incomes, estimated gains			✓	✓
Observations	1,501	1,501	1,501	1,501
R^2	0.003	0.002	0.089	0.090

NOTE: Environmental effectiveness refers to the belief that the policy would be effective at reducing pollution and fighting climate change. Price elasticities for housing and transport are elicited from respondents' expected reduction in energy consumption of French people following a given increase in energy prices. For more details, see the discussion in the main text, Section 3.2. The list of controls can be found in the Appendix F.

D.2 Self-interest

Table D.2: Transition matrix after telling respondents they are expected to *win* (75.8%).

Before \ *After*	**Winner** (25%)	**Unaffected** (28%)	**Loser** (47%)
Winner (16%)	79%	13%	8%
Unaffected (24%)	22%	63%	15%
Loser (60%)	12%	18%	70%

NOTE: See the discussion in the main text, Section 4.1.1.

Table D.3: Transition matrix after telling respondents they are expected to *lose* (24.2%).

Before \ *After*	**Winner** (3%)	**Unaffected** (12%)	**Loser** (86%)
Winner (7%)	16%	3%	81%
Unaffected (15%)	5%	50%	46%
Loser (78%)	1%	5%	94%

NOTE: See the discussion in the main text, Section 4.1.1.

Table D.4: Share with new beliefs aligned with feedback, among those with a large gain or loss ($|\widehat{\gamma}| > 110$).

	Aligned with feedback: $G^F = \widehat{\Gamma}$	
	win ($\widehat{\Gamma} = 1$) (81.6%)	lose ($\widehat{\Gamma} = 0$) (18.4%)
Initial belief winner ($g > 0$) (19.4%)	77.6% [68.5%;84.7%]	78.4% [43.2%;94.5%]
Initial belief unaffected ($g = 0$) (28.2%)	20.7% [14.8%;28.1%]	32.7% [14.7%;57.7%]
Initial belief loser ($g < 0$) (52.3%)	10.8% [7.3%;15.8%]	92.2% [84.5%;96.3%]
Initial belief affected ($g \neq 0$) (70.8%)	32.7% [27.7%;38.1%]	91.1% [83.5%;95.4%]
All (100%)	28.9% [24.8%;33.3%]	83.0% [74.8%;88.9%]

NOTE: The 95% confidence intervals for binomial probabilities are given in brackets. The table reads as follows: among those who initially think that they would win ($g^0 > 0$) but are told they are expected to lose ($\widehat{\Gamma} = 0$), 78.4% agree that they would lose ($G^F = 0$). Compared to Table 4.1, this table focuses on the subsample of 546 respondents with a large gain or loss ($|\widehat{\gamma}| > 110$)) who received feedback. See the discussion in the main text, Section 4.1.1.

D.3 Environmental effectiveness

Table D.5: Effect of information interventions on beliefs about environmental effectiveness

	Environmental effectiveness			
	not "No"			"Yes"
	OLS		*logit*	*OLS*
	(1)	(2)	(3)	(4)
Info on Environmental Effectiveness (Z_E)	0.043	0.063	0.052	0.059
	(0.017)	(0.018)	(0.018)	(0.014)
Info on Climate Change (Z_{CC})	0.044	0.041	0.043	0.029
	(0.024)	(0.024)	(0.024)	(0.018)
Info on Particulate Matter (Z_{PM})	0.039	0.029	0.037	0.017
	(0.024)	(0.024)	(0.024)	(0.019)
$Z_{CC} \times Z_{PM}$	−0.040	−0.033	−0.042	−0.005
	(0.035)	(0.034)	(0.033)	(0.027)
Controls: Sociodemo		✓	✓	✓
Observations	3,002	3,002	3,002	3,002
R^2	0.003	0.047		0.075

NOTE: See the discussion in the main text, Section 4.2.

D.4 Progressivity

Table D.6: Effect of information on perceived progressivity

	Progressivity: not "No" (P)		
	(1)	(2)	(3)
Constant	0.419	0.435	0.052
	(0.022)	(0.033)	(0.319)
Information on progressivity (Z_P)	−0.021	0.050	0.051
	(0.027)	(0.040)	(0.041)
Large bias ($\lvert\widehat{\gamma}-g\rvert > 110$)		−0.028	−0.040
		(0.045)	(0.045)
Interaction $Z_P \times (\lvert\widehat{\gamma}-g\rvert > 110)$		−0.130	−0.117
		(0.055)	(0.055)
Controls: Sociodemo, politics			✓
Observations	1,444	1,444	1,444
R^2	0.0004	0.018	0.094

NOTE: A large bias is defined as a difference between the subjective (g) and objectively estimated ($\widehat{\gamma}$) net gain larger than 110€/year per c.u. See the discussion in the main text, Section 4.3.

E Additional specifications for the estimation of acceptation motives

Table E.1: Effect of self-interest on acceptance: second stages of alternative specifications

	Targeted Dividend (A^T)			After Feedback (A^F)		
	Acceptance	Approval		Acceptance	Approval	
	(1)	(2)	(3)	(4)	(5)	(6)
Believes wins	0.574	0.357		1.131	0.609	
	(0.136)	(0.117)		(0.298)	(0.233)	
Believes does not lose			0.343			0.347
			(0.113)			(0.133)
Controls: Incomes (piecewise continuous) estimated gains, sociodemo, other motives	✓	✓	✓	✓	✓	✓
Controls: Policy assigned	✓	✓	✓			
Subsample: [p10; p60] (A^T) or $\lvert\widehat{\gamma}\rvert < 50$ (A^F)	✓	✓	✓	✓	✓	✓
Effective F-Statistic	21.3	21.3	15.6	11.4	11.4	21.3
Observations	1,969	1,969	1,969	757	757	757
R^2	0.321	0.217	0.217	0.541	0.518	0.518

NOTE: See the results of the main specifications, Table 5.2. As in the latter table, the source of exogenous variation in the belief used in first stages for the targeted dividend is the random assignment of the income threshold, which determines eligibility for the dividend. The first stage for the non-targeted dividend instead exploits the discontinuity in the win/lose feedback when the net gain switches from negative to positive.

Table E.2: Effect of self-interest on acceptance: the role of income

	Acceptance of Tax & Targeted Dividend (A^T)				
	(1)	(2)	(3)	(4)	(5)
Believes does not lose (G^T)	0.773	0.556	0.549	0.535	0.502
	(0.222)	(0.133)	(0.133)	(0.133)	(0.130)
Income above 35th percentile ($\mathbb{1}_{I>p35}$)	0.343				
	(0.508)				
$G^T \times \mathbb{1}_{I>p35}$	−0.392				
	(0.311)				
Initial policy Acceptance (A^0)	0.387	0.353	0.354	0.356	0.359
	(0.058)	(0.041)	(0.041)	(0.041)	(0.040)
Percentile with additional income slope change		30	40	50	60
Controls: Incomes (piecewise continuous)	✓	✓	✓	✓	✓
estimated gains, sociodemo, other motives					
Subsample: [p10; p60]; Controls: Policy assigned	✓	✓	✓	✓	✓
Effective F-statistic	5.5	15.3	15.2	15.2	16.1
Observations	1,969	1,969	1,969	1,969	1,969
R^2	0.571	0.321	0.321	0.321	0.321

NOTE: See the results of the main specifications, Table 5.2. The source of the exogenous variation in the belief used in the first stage is the random assignment of the income threshold, which determines eligibility for the dividend.

Table E.3: Effect of believing in environmental effectiveness on support: second stages of alternative specifications

	Initial Tax & Dividend			
	Acceptance (A^0)			
	LIML	*OLS*	*IV*	*OLS*
	(A1)	(A2)	(A3)	(A4)
Environmental effectiveness: "Yes"	0.643	0.367		
	(0.320)	(0.020)		
Environmental effectiveness: not "No"			0.479	0.413
			(0.230)	(0.015)
Instruments: info E.E. & C.C.	✓		✓	
Controls: Socio-demo, other motives	✓	✓	✓	✓
Effective F-Statistic			6.0	
Observations	3,002	3,002	3,002	3,002
R^2	0.295	0.295	0.218	0.379

NOTE: Standard errors are reported in parentheses. The list of controls can be found in Appendix F, and the main results in Table 5.4. As in the latter Table, the dependent variable corresponds to either initial approval (answer "Yes" to support of the policy) or acceptance (answer not "No"). The first stage exploits the information randomly displayed about climate change (C.C.) and the effectiveness of carbon taxation (E.E.) as exogenous instruments.

F Control variables

Sociodemo: *respondent's income, household's income, sex, age* (5 categories)*, employment status* (9 categories)*, socioprofessional category* (8 categories)*, region of France* (10 categories)*, size of town* (5 categories)*, diploma* 4 categories*, household size, number of people above 14, number of adults, number of c.u., income per c.u., smokes, favored media for news* (5 categories)*.*

Politics: *extreme left, left, center, right, extreme right, interest in politics* (3 categories)*, conservative, liberal, humanist, patriot, environmentalist, apolitical.*

Political leaning: *extreme left, left, center, right, extreme right, indeterminate.*

Energy: *heating mode* (collective vs. individual)*, heating energy* (7 categories)*, annual distance travelled, fuel economy, diesel* (binary)*, gasoline* (binary)*, number of vehicles.*

Incomes: *income of respondent, income of the second adult, income of respondent squared, income of the second adult squared, dummy for absence of second adult.*

Incomes (piecewise continuous): *income percentile of respondent (I_1), income percentile of the second adult (I_2), dummy for absence of second adult,* $\min(I_1 - 20, 0)$, $\min(I_1 - 70, 0)$, $\min(I_2 - 20, 0)$, $\min(I_2 - 70, 0)$.

Estimated gains: *simulated net gain, squared simulated gain.*

G Questionnaire

Information intervention

1. [No information] Welcome to this survey.

   It was conceived by two social science researchers. It lasts about 15-20 minutes.

2. [Info PM] Welcome to this survey.
   It was conceived by two social science researchers. It lasts about 15-20 minutes.

   Before starting, please read carefully the information below on particulate matter pollution:

   - particulate matter is responsible for 48,000 deaths in France each year;
   - particulate matter reduces the life expectancy of French people by 9 months;
   - reducing fuel consumption would reduce the health problems associated with particulate matter.

   Source: France Public Health Report (2016)

3. [Info CC] Welcome to this survey.
   It was conceived by two social science researchers. It lasts about 15-20 minutes.

   Please read carefully the information below on climate change.

   - Climate change is already responsible for 150,000 deaths annually.
   - If greenhouse gas emissions continue on their current trend, the average global temperature increase will be +5°C in 2100 and +8°C in 2250.
   - A rapid transition to renewable energies is technically possible and would contain global warming at +2°C.

According to scientists, in the absence of ambitious measures:

- a large proportion of species face an increased risk of extinction,
- natural disasters will intensify (hurricanes, heat waves, droughts, floods, forest fires, etc.);

- by 2100, 270 million more people would be flooded each year due to sea-level rise;
- violent conflicts and migration flows can be expected to increase.

Sources: Burke et al (2009), Hinkel et al (2014), IPCC Report (2014), Meinshausen et al (2011), Patz et al (2005)

Sociodemographics

4. What is your postal code?

5. What is your gender (in the sense of civil status)?
   Female; Male

6. What is your age group?
   18 to 24 years old; 25 to 34 years old; 35 to 49 years old; 50 to 64 years old; 65 years old or more

7. What is your employment status?
   Permanent; Temporary contract; Unemployed; Student; Retired; Other active; Inactive

8. What is your socioprofessional category? (Remember that the unemployed are active workers).
   Farmer; Craftsperson, merchant; Independent; Executive; Intermediate occupation; Employee; Worker; Retired; Other Inactive

9. What is your highest degree?
   No diploma; Brevet des collèges; CAP or BEP [secondary]; Baccalaureate; Bac +2 (BTS, DUT, DEUG, schools of health and social training, etc.); Bac +3 (licence...) [bachelor's]; Bac +5 or more (master's, engineering or business school, doctorate, medicine, master, DEA, DESS, etc.)

10. How many people live in your household? Your household includes: you, your family members who live with you, and your dependents.

11. What is your net **monthly** income (in euros)? **All income** (before withholding tax) is included here: salaries, pensions, allowances, APL [housing allowance], land income, etc.

12. What is the net **monthly** income (in euros) **of your household**? **All income** (before withheld taxes) is included here: salaries, pensions, allowances, APL [housing allowance], land income, etc.

13. In your household, how many people are 14 years old or older (**including yourself**)?

14. In your household, how many people are over the age of majority (**including yourself**)?

Energy characteristics

15. What is the surface area of your home? (in m²)

16. What is the heating system in your home?
    Individual heating; Collective heating; PNR (Don't know, don't say)

17. What is the main heating energy source in your home?
    Electricity Town gas; Butane, propane, tank gas; Heating oil; Wood, solar, geothermal, aerothermal (heat pump); Other; PNR (Don't know, don't say)

18. How many motor vehicles does your household have?
    None; One; Two or more

19. [Without a vehicle] How many kilometers have you driven in the last 12 months?

20. [One vehicle] What type of fuel do you use for this vehicle?
    Electric or hybrid; Diesel; Gasoline; Other

21. [One vehicle] What is the average fuel economy of your vehicle? (in Liters per 100 km)

22. [One vehicle] How many kilometers have you driven your vehicle in the last 12 months?

23. [At least two vehicles] What type of fuel do you use for your main vehicle?
Electric or hybrid; Diesel; Gasoline; Other

24. [At least two vehicles] What type of fuel do you use for your second vehicle?
Electric or hybrid; Diesel; Gasoline; Other

25. [At least two vehicles] What is the average fuel economy of all your vehicles? (in Liters per 100 km)

26. [At least two vehicles] How many kilometers have you driven in all your vehicles in the last 12 months?

Partial reforms [transport / housing]

27. Do you think that an increase in the VAT would result in a loss of more purchasing power for your household than for the average French household?
Yes, much more; Yes, a little more; As much as the average; No, a little less; No, a lot less; PNR (Don't know, don't say)

28. Do you think that an increase in [fuel taxes / taxes on gas and heating oil] would cause your household to lose more purchasing power than an average French household?
Yes, much more; Yes, a little more; As much as the average; No, a little less; No, a lot less; PNR (Don't know, don't say)

29. The government is studying a fuel tax increase whose revenues would be redistributed to all households, regardless of their income. This would imply:

    - [an increase in the price of gasoline by 11 cents per liter and diesel by 13 cents per liter / a 13% increase in the price of gas, and a 15% increase in the price of heating oil];
    - an annual payment of [60 / 50]€ to each adult, or [120 / 100]€ per year for a couple.

    In terms of purchasing power, would your household be a winner or a

loser with such a measure?

Winner; Unaffected; Loser

30. [*Winner* selected] **According to you, your household's purchasing power would increase:**

    From 0 to [10·c.u.] € per year; From [10·c.u.] to [20·c.u.] € per year; From [20·c.u.] to [30·c.u.] € per year; From [30·c.u.] to [40·c.u.] € per year; More than [40·c.u.] € per year

31. [*Loser* selected] **According to you, the purchasing power of your household would decrease by:**

    From 0 to [15·c.u.] € per year; From [15·c.u.] to [40·c.u.] € per year; From [40·c.u.] to [70·c.u.] € per year; From [70·c.u.] to [110·c.u.] € per year; From [110·c.u.] to [160·c.u.] € per year; More than [160·c.u.] € per year

32. If fuel prices increased by 50 cents per liter, by how much would **your household** reduce its fuel consumption?

    0% - [*I already consume almost none / I am already not consuming*]*; 0% -* [*I am constrained on all my trips / I will not reduce it*]*; From 0% to 10%; From 10% to 20%; From 20% to 30%; More than 30% -* [*I would change my travel habits significantly / I would change my consumption significantly*]

33. In your opinion, if [fuel prices increased by 50 cents per liter / gas and heating oil prices increased by 30%], by how much would **French people** reduce their consumption on average?

    From 0% to 3%; From 3% to 10%; From 3% to 10%; From 10% to 20%; From 20% to 30%; More than 30%

34. Do you think that an increase in taxes on gas and heating oil would cause your household to lose more purchasing power than the average French household?

    Yes, a lot more; Yes, a little more; As much as average; No, a little less; No, a lot less; PNR (Don't know, don't say)

Tax & dividend: initial

35. The government is studying an increase in the carbon tax whose revenues would be redistributed to all households, regardless of their income. This would imply:

    - an increase in the price of gasoline by 11 cents per liter and diesel by 13 cents per liter;
    - an increase of 13% in the price of gas, and 15% in the price of heating oil;
    - an annual payment of 110€ to each adult, or 220€ per year for a couple.

    In terms of purchasing power, would your household win or loser with such a measure?
    Win; Be unaffected; Lose

36. [*Winner* selected] **According to you, your household's purchasing power would increase by:**
    From 0 to [20·c.u.] € per year; From [20·c.u.] to [40·c.u.] € per year; From [40·c.u.] to [60·c.u.] € per year; From [60·c.u.] to [80·c.u.] € per year; More than [80·c.u.] € per year

37. [*Loser* selected] **According to you, the purchasing power of your household would decrease by:**
    From 0 to [30·c.u.] € per year; From [30·c.u.] to [70·c.u.] € per year; From [70·c.u.] to [120·c.u.] € per year; From [120·c.u.] to [190·c.u.] € per year; From [190·c.u.] to [280·c.u.] € per year; More than [280·c.u.] € per year

38. [[empty] / Scientists agree that a carbon tax would be effective in reducing pollution.] Do you think that such a measure would reduce pollution and fight climate change?
    Yes; No; PNR (Don't know, don't say)

39. In your opinion, which categories would lose [[blank] / purchasing power] with such a measure? (Several answers possible)

No one; The poorest; The middle classes; The richest; All French people; Rural or peri-urban people; Some French people, but not a particular income category; PNR (Don't know, don't say)

40. In your opinion, what categories would gain purchasing power with such a measure? (Several answers possible)
    No one; The poorest; The middle classes; The richest; All French people; Urban dwellers; Some French people, but not a particular income category; PNR (Don't know, don't say)

41. Would you approve of such a measure?
    Yes; No; PNR (Don't know, don't say)

Tax & dividend: after information

42. [Feedback] We always consider the same measure. As a reminder, it would imply:

    - an increase in the price of petrol by 11 cents per liter and diesel by 13 cents per liter;
    - an increase of 13% in the price of gas, and 15% in the price of heating oil;
    - an annual payment of 110€ to each adult, or 220€ per year for a couple.

    In five out of six cases, a household with the same characteristics as yours would **[win / lose]**. (The characteristics taken into account are: heating with [source] for a dwelling of [size] m²; [distance] km covered with an average consumption of [fuel economy] liters per 100 km).

    Based on this estimate, do you now think that your household would be:
    Winner; Unaffected; Loser

43. [Info on progressivity] On average, this measure would increase the purchasing power of the poorest households and decrease that of the richest who consume more energy.

In view of this new information, do you think this measure would benefit the poorest?
Yes; No; PNR (Don't know, don't say)

44. [No info on progressivity] Do you think this measure would benefit the poorest?
Yes; No; PNR (Don't know, don't say)

45. In view of the above estimate, would you approve of such a measure?
Yes; No; PNR (Don't know, don't say)

46. Why do you think this measure is beneficial? (Maximum three responses)
Contributes to fight climate change; Reduces the harmful effects of pollution on health; Reduces traffic congestion; Increases my purchasing power; Increases the purchasing power of the poorest; Fosters France's independence from fossil energy imports; Prepares the economy for tomorrow's challenges; For none of these reasons; Other (specify):

47. Why do you think this measure is unwanted? (Maximum three answers)
Is ineffective in reducing pollution; Alternatives are insufficient or too expensive; Penalizes rural areas; Decreases my purchasing power; Decreases the purchasing power of some modest households; Harms the economy and employment; Is a pretext for raising taxes; For none of these reasons; Other (specify):

Tax & targeted dividend

48. The government is studying an increase in the carbon tax whose revenues would be redistributed **to the [20 / 30 / 40 / 50]% of the poorest French people only**. This would imply:

- an increase in the price of gasoline by 11 cents per liter and diesel by 13 cents per liter;
- an increase of 13% in the price of gas, and 15% in the price of heating oil;
- an annual payment of [550 / 360 / 270 / 220]€ for each adult earning less than [780 / 1140 / 1430 / 1670]€ per month (welfare benefits included, before withholding tax);

- no compensation for the others.

We estimate that in your household, [number of recipients] persons would receive this payment.

In terms of purchasing power, would your household win or lose with such a measure?
Win; Be unaffected; Lose

49. Would you approve such a measure?
    Yes; No; PNR (Don't know, don't say)

Other questions The survey is completed by other attitudinal questions, treated in our companion paper, Douenne & Fabre (2020). Hereafter, we only describe the questions that are used in the present paper.

50. Please select "A little" (test to check that you are attentive).
    Not at all; A little; A lot; Completely; PNR (Don't know, don't say)

51. Do you smoke regularly? *Yes; No*

52. How much are you interested in politics?
    Almost not; A little; A lot

53. How would you define yourself? (Several answers possible)
    Extreme left; Left; Center; Right; Extreme right; Liberal; Conservative; Liberal; Humanist; Patriot; Apolitical; Environmentalist

54. How do you keep yourself informed of current events? Mainly through...
    Television; Press (written or online); Social networks; Radio; Other

55. What do you think of the Yellow Vests? (Several answers possible)
    I am part of them; I support them; I understand them; I oppose them; PNR (Don't know, don't say)

56. The survey is nearing completion. You can now enter any comments, comments or suggestions in the field below.

H Profile of the Yellow Vests

Table H.1: Positioning towards Yellow Vests, per category.

	Opposed	Understands	Supports	Is part	PNR
Extreme-left (2%)	6%	26%	51%	12%	5%
Left (20%)	17%	36%	36%	5%	7%
Center (13%)	49%	30%	15%	2%	6%
Right (16%)	40%	32%	20%	3%	6%
Extreme-right (9%)	11%	28%	47%	10%	5%
Indeterminate (40%)	19%	32%	30%	4%	13%
Liberal (5%)	48%	26%	18%	2%	6%
Conservative (2%)	22%	28%	30%	10%	11%
Humanist (11%)	21%	35%	29%	5%	10%
Patriot (8%)	21%	27%	39%	7%	6%
Apolitical (21%)	21%	31%	32%	4%	12%
Environmentalist (15%)	17%	39%	27%	5%	12%
Rural (21%)	20%	31%	34%	6%	9%
<20k (17%)	24%	28%	34%	6%	9%
20-100k (14%)	22%	33%	32%	4%	9%
>100k (31%)	29%	34%	26%	3%	8%
Paris (17%)	28%	33%	25%	4%	11%
No diploma or *Brevet* (30%)	21%	29%	34%	5%	10%
CAP or *BEP* (24%)	23%	28%	36%	6%	7%
Baccalauréat (17%)	22%	35%	29%	4%	11%
Higher (29%)	32%	21%	36%	3%	8%
Age: 18–24 (12%)	23%	34%	27%	4%	12%
Age: 25–34 (15%)	21%	33%	28%	7%	11%
Age: 35–49 (24%)	25%	32%	29%	5%	9%
Age: 50–64 (24%)	21%	32%	36%	4%	7%
Age: $\geq$ 65 (25%)	32%	30%	28%	3%	7%
Income decile: 1	25%	33%	26%	3%	14%
Income decile: 2	18%	31%	35%	5%	11%
Income decile: 3	17%	31%	32%	7%	12%
Income decile: 4	15%	33%	37%	6%	9%
Income decile: 5	21%	29%	36%	5%	8%
Income decile: 6	26%	33%	29%	6%	7%
Income decile: 7	25%	36%	28%	4%	7%
Income decile: 8	31%	31%	28%	3%	8%
Income decile: 9	39%	32%	20%	3%	6%
Income decile: 10	47%	29%	15%	3%	6%
Female (52%)	21%	34%	29%	5%	12%
Male (48%)	29%	30%	31%	5%	6%
Average	*25%*	*32%*	*30%*	*5%*	*9%*

NOTE: The percentages in parenthesis express the weighted share of each category from our sample. See discussion in the main text, Section 2.1.

I Support rates for Tax & Dividend policies

Table I.1: Support for Tax & Dividend policies at different stages of the survey.

	"Would you approve of this reform?"		
	"Yes"	"No"	"PNR"
Initial stage (A^0)	10.4%	70.3%	19.3%
After feedback (A^F)	16.8%	63.0%	20.2%
Targeted dividend (A^T)			
bottom 20% (A^T)	19.1%	63.2%	17.7%
bottom 30%	15.0%	66.0%	19.0%
bottom 40%	17.3%	67.6%	15.1%
bottom 50%	12.8%	73.3%	13.9%
all	16.1%	67.6%	16.2%

NOTE: The table reads as follows: at the initial stage, 10.4% of the respondents approved of a Tax & Dividend. After receiving customized feedback (either win or lose), 16.8% of them approved it. When the dividend targets only people below the bottom 20% (to which the respondent or its spouse may be eligible or not), 19.1% of them approve it. Refers back to Paragraph 2.2.2.

J Heterogeneity in pessimism and motivated reasoning

J.1 Heterogeneity in pessimism

To better understand the determinants of the pessimistic updating of the win/lose category, we investigate the heterogeneity in updating. To measure *correct updating*, we define a variable U that equals $+1$ if the respondent adopts feedback that invalidates their initial belief, 0 if they do not update, or -1 if they initially felt *unaffected* but update as being against the feedback. Over the subsample of *invalidated* respondents who should have updated because their initial win/lose category is not aligned with our feedback ($g_i \cdot \widehat{\gamma}_i \leq 0$), we regress the *correct updating*, U, on the initial belief not to lose, G^0, and a vector of characteristics, $\mathbf{C}$:

$$U_i = \delta_0 + \beta_U G_i^0 + \beta_{\mathbf{C}} \mathbf{C} + \varepsilon_i \quad \text{for } i : g_i \cdot \widehat{\gamma}_i \leq 0, \tag{6}$$

The high values for β_U reported in columns (1-3) of Table J.1 again prove that among those who should have updated, those who initially thought that they would win (the optimistic losers) update significantly more correctly than those who did not think so (the pessimistic winners). Beyond this asymmetry, columns (2-5) show that some respondent characteristics are correlated with correct updating. Relative to unemployed and inactive people, retired, active, and students are more likely to update correctly, the latter being 22 p.p. more likely to correctly revise their beliefs when they are invalidated than unemployed and inactive people (column 2). The categories of respondents who initially displayed the largest bias appear also to be less likely to update correctly. Indeed, people who are part of the Yellow Vests movement are 14 p.p. less likely to correctly update than people who oppose it, even when controlling for disapproval of the policy, which itself decreases the likelihood of correctly updating by 18 p.p. The reason why previous characteristics affect the likelihood of correctly updating remains unclear. It is possible that they are correlated with people's uncertainty about their net gains. Alternatively, the Yellow Vests' greater distrust of the government (documented in Algan et al., 2019) could also apply to information on policies provided by researchers. Finally, these results also indicate that motivated reasoning may be at play.

J.2 Motivated reasoning

The previous results suggest that conservatism in belief revision does not simply follow people's cognitive difficulties when dealing with Bayes' rule. The greater likelihood of correct updating for those who support the reform indicates that political views and identity can shape belief formation. Indeed, the more people oppose the tax, the less likely they are to correctly update, as shown in columns (2-5) of Table J.1. From columns (4-5), we also see that this result is entirely driven by the "pessimistic winners": the updating of people who wrongly think that they will win does not depend on their approval, which is another indication that the revision in beliefs is driven by a rejection of the tax. This is not to say that few people seek to reach accurate beliefs. It still could be the case that informing any respondent that they would win makes them revise their subjective gain by, say, 100€ upwards, leading

Table J.1: Heterogeneity in updating.

	Correct updating (U)				
	(1)	(2)	(3)	(4)	(5)
Constant	0.120	−0.036	−0.011	−0.073	0.707
	(0.012)	(0.190)	(0.192)	(0.192)	(1.007)
Winner, before feedback ($\dot{G}$)	0.695	0.551	0.563		
	(0.078)	(0.083)	(0.083)		
Initial tax: PNR (I don't know)		0.179	0.186	0.199	0.113
		(0.032)	(0.067)	(0.033)	(0.155)
Initial tax: Approves		0.176	−0.031	0.216	−0.162
		(0.046)	(0.115)	(0.049)	(0.185)
Diploma × Initial tax: PNR			−0.003		
			(0.025)		
Diploma × Initial tax: Approves			0.072		
			(0.037)		
Subjective gain (g)		0.0004	0.0004	0.001	−0.001
		(0.0002)	(0.0002)	(0.0003)	(0.004)
Subjective gain: unaffected ($g = 0$)		−0.127	−0.126	−0.208	−0.331
		(0.033)	(0.033)	(0.033)	(0.219)
Bias about gain ($g - \widehat{\gamma}$)		−0.00005	−0.0001	−0.001	−0.0003
		(0.0001)	(0.0001)	(0.0003)	(0.0002)
Diploma (1 to 4)		0.014	0.009	−0.001	0.148
		(0.013)	(0.014)	(0.013)	(0.078)
Retired		0.130	0.127	0.108	0.124
		(0.079)	(0.079)	(0.080)	(0.435)
Active		0.166	0.165	0.160	0.113
		(0.054)	(0.054)	(0.054)	(0.365)
Student		0.224	0.229	0.183	0.402
		(0.075)	(0.075)	(0.074)	(0.526)
Yellow Vests: PNR		−0.045	−0.047	−0.031	0.013
		(0.047)	(0.047)	(0.048)	(0.246)
Yellow Vests: understands		−0.065	−0.066	−0.059	0.141
		(0.034)	(0.034)	(0.034)	(0.170)
Yellow Vests: supports		−0.063	−0.063	−0.050	−0.156
		(0.036)	(0.036)	(0.036)	(0.206)
Yellow Vests: is part		−0.141	−0.142	−0.106	−0.985
		(0.061)	(0.061)	(0.063)	(0.367)
Includes "pessimistic winners"	✓	✓	✓	✓	
Includes "optimistic losers"	✓	✓	✓		✓
Controls: sociodemo, politics, estimated gains		✓	✓	✓	✓
Observations	1,365	1,365	1,365	1,265	100
R^2	0.055	0.144	0.146	0.115	0.696

NOTE: Omitted variables are *Unemployed/Inactive* and *Yellow Vests: opposes*. The list of controls can be found in Appendix F.

only those with small subjective losses to discover that they would win.[3] One can actually see from the positive and statistically significant effect of *subjective gain (g)* that such an accuracy motive is at play. However, this effect remains small relative to those indicative of policy support, indicating the presence of another mechanism, such as motivated reasoning.

[3]Those with small subjective gains who discover that they lose would similarly correctly update. Those with large subjective losses would not update while virtually no respondent has a large subjective gain. This would explain the asymmetry in the updates.

Column (3) further shows that the effect of approving the policy on correct updating is even stronger for more educated people—since the interaction term between approval and diploma is positive and significant—even capturing the entire effect of initial policy approval.

The previous findings are comparable to empirical evidence from Kahan (2013) that politically motivated reasoning about climate change is not a reasoning deficiency but rather a reasoning adaptation following the interest that individuals have in conveying "their membership in and loyalty to affinity groups central to their personal well-being". In our case, the position relative to the Yellow Vests proxies for the groups that respondents identify with, and the differentiated updating along this spectrum can be interpreted as motivated reasoning. In addition, the hypothesis that motivated reasoning follows from a rational adaptation purpose can explain our finding that better educated people are *more* prone to motivated reasoning since they are better able to formulate specious reasoning and reconcile antagonistic information and ideas. To the best of our knowledge, this result is the first case for rational motivated reasoning in the context of climate policies, complementing the findings of Druckman & McGrath (2019) that this mechanism can explain polarization around beliefs on climate change.[4]

Building upon the cognitive and social mechanisms described by Kraft et al. (2015) and documented by, e.g., Redlawsk (2002), we hypothesize the following narrative as one of the possible channels through which aversion to the carbon tax became entrenched. The Yellow Vests first gathered to defend their interest (above all, their purchasing power), and a side effect of the daily interactions on roundabouts was to bring material and emotional support to the protesters (Challier, 2019). A group identity soon developed, which crystallized shared beliefs and affects such as a rejection of carbon taxation. This group identity gained support from a large majority of the population, notably through social networks. Now, due to the

[4]This evidence provides empirical support for various models of endogenous belief formation. For example, Little (2019) formalizes the idea that directional motives may override accuracy motives and that people update their auxiliary beliefs (in our case, the win/lose category) to preserve their consistency with their core beliefs (here, rejection of the tax). Admittedly, one might expect the importance of accuracy motives relative to directional motivated reasoning to increase in a higher stakes environment. However, this hypothesis cannot be tested in our setup, and previous literature does not provide conclusive evidence on the matter (Kunda, 1990; Camerer & Hogarth, 1999).

loyalty to the group and affects that have entered their subconscious, Yellow Vests supporters instinctively oppose any carbon tax and are prone to find excuses to cope with contradictory messages, e.g., by denying the reliability of these messages (Golman et al., 2016). Admittedly, such a narrative falls short of explaining the majority rejection among those who oppose the Yellow Vests (which may originate from pessimistic perceptions more than tax aversion), but it illustrates how pessimistic beliefs can be so persistent among Yellow Vests supporters.

Overall, the persistent pessimism is consistent with people forming their beliefs in a motivated way. Nevertheless, other mechanisms—such as a distrust of the government—may play a key role. Further research with a different design is needed to determine the relative importance of these different mechanisms.

K Relation between support and belief in progressivity

Specifications used As noticed in Section 5.3 of the paper, the ambiguous responses to our information intervention on progressivity do not allow us to perform an IV estimation to identify the causal effect of this motive. To explore how respondents' beliefs about progressivity relate to their support for the policy, we therefore estimate simple OLS and logit regressions. Even though we control for many variables, including beliefs over other motives of support, we may suspect that the coefficients obtained remain biased by omitted variables or reverse causality. They should therefore be taken as partial correlations and not causal estimates.

We focus on the acceptance question *after information*, i.e., after asking whether the reform is progressive or not. Table K.1 presents the results of different regressions, depending on the set of controls and on the choice of variables. Columns (1)-(4) report regressions of acceptance on the broad definition of motives of acceptance: answers *not "No"* to progressivity, effectiveness and *not "lose"* to win/lose category. On the contrary, columns (5)-(6) use strict definitions for both approval and the covariates, where only *"Yes"* (or *"win"*) answers activate the dummy variables.

Table K.1: Support of the Tax & Dividend in function of beliefs in each motive.

	Support (after information)					
	Broad definition of variables (*not "No"*)				Strict definitions (*"Yes"*)	
	OLS			*logistic*	*OLS*	
	(1)	(2)	(3)	(4)	(5)	(6)
Progressivity (P)	0.223	0.214	0.560	0.544	0.228	0.482
	(0.038)	(0.039)	(0.023)	(0.019)	(0.041)	(0.023)
Winner (G^1)	0.332	0.264			0.303	
	(0.020)	(0.018)			(0.019)	
Effective (E)	0.258	0.112			0.244	
	(0.023)	(0.021)			(0.020)	
$(G^1 \times E)$	0.127	0.054			0.126	
	(0.034)	(0.030)			(0.037)	
Interaction: winner $(P \times G^1)$	0.183	0.144			0.098	
	(0.050)	(0.044)			(0.048)	
Interaction: effective $(P \times E)$	0.172	0.090			0.281	
	(0.057)	(0.050)			(0.059)	
Income (I, in k€/month)	0.017	0.025			0.037	
	(0.022)	(0.019)			(0.018)	
Interaction: income $(P \times I)$		−0.009			−0.019	
		(0.012)			(0.014)	
$P \times G^1 \times E$	−0.400	−0.320			−0.314	
	(0.072)	(0.063)			(0.083)	
Initial policy Acceptance (A^0)		0.467				
		(0.016)				
Controls: Sociodemo	✓	✓			✓	
Observations	3,002	3,002	3,002	3,002	3,002	3,002
R^2	0.460	0.586	0.162		0.391	0.130

NOTE: Standard errors are reported in parentheses. For the logit, the average marginal effects are reported and not the coefficients. The list of controls can be found in Appendix F. The covariates and dependent variables refer either to broad (1-4) or strict (5-6) definitions of the beliefs, where strict dummies do not cover "PNR" or "Unaffected" answers. See the discussion in the main text, Section 5.3.

Results On average, believing that the reform is *not regressive* is associated with a higher *acceptance* rate by 56 p.p. (column 3) while believing it is *progressive* is associated with a higher *approval* rate by 48 p.p. (6). However, when one introduces other motives of acceptance and their interactions as covariates, with households characteristics as controls, one observes that the effect of progressivity is lower: its marginal effect at the sample mean -

i.e., accounting for the average marginal effect of interaction terms - is 27 p.p.[5] To disentangle the link between beliefs over net gains and progressivity, we also include the interaction between progressivity and income as a covariate (2, 5). Although the coefficient is negative, in accordance with intuition, the effect is small and not significant. Adding the powerful control of initial policy acceptance in column (2) has a negligible influence on the effect of progressivity of 24 p.p. (instead of 27 p.p.), which validates our choice of the preferred specification (1). Despite the powerful control, column (2) is not our preferred specification because the effect of environmental effectiveness is mostly captured by the covariate "initial policy acceptance" since the information intervention on climate change predated the initial question on acceptance. Finally, using the strict definitions of beliefs and approval yields a smaller correlation (6) but similar results when accounting for relevant controls (5), showing that the effects are not driven by a correlation between "PNR" answers. Overall, although these results are not causal, they suggest that the belief that the tax is progressive is associated with a higher support, all else equal.

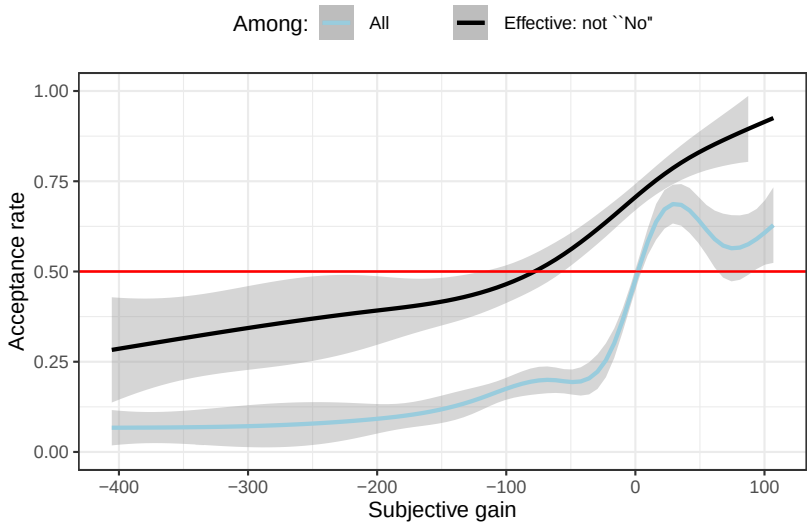
L Willingness to pay

For respondents who believe in the effectiveness of our Tax & Dividend, we are able to infer their willingness to pay (WTP) for climate mitigation by studying the acceptance rate as a function of subjective gain. We adopt a common practice in the literature and define the WTP as the monetary loss that the *median* agent is willing to incur (Hanemann, 1984). Figure L.1 indicates that this WTP is about 60€/year per c.u. since this corresponds to the subjective loss below when a majority accepts the policy. This WTP is computed only among people who believe that the tax is not ineffective since it would make little sense to assume that some people are willing to pay for an instrument that does not achieve its expected goal. Indeed, Figure L.1 shows that the "WTP" of the whole sample is zero, meaning that the median person accepts the policy only when they personally gain from it. Our method

[5] Although these results are not causal, they show that 90% of those who believe in the three motives approve of the policy, along with 65-75% of those who believe in two of them.

has several advantages. First, it can be interpreted as a willingness to accept as much as a willingness to pay because our instrument is neither framed as a good to buy nor as damage to be compensated for, and net gains do not distinguish cost increases from payments received. Second, our method is more akin to revealed preferences - and hence probably less biased (Murphy et al., 2005) - than previous ones because most studies directly ask respondents to select their preferred option for climate mitigation, be it using a contingent valuation method (Berrens et al., 2004; Cameron, 2005; Kotchen et al., 2013) or a discrete choice experiment (Longo et al., 2008; Alberini et al., 2018). Still, our estimation has two notable limitations relative to the literature: it relies on a non-representative subsample, and subjective gains are endogenous from acceptance.

To compare our estimation with those of the literature, expressed per household, we have to multiply our WTP by the average number of consumption units in households: 1.6. The WTP per household we get, 96€, lies in the typical range of the literature (Jenkins, 2014; Streimikiene et al., 2019), suggesting that the protests against carbon taxation encountered in France do not reflect specific preferences for environmental policies.



NOTE: The black curve indicates that a majority of those who did not answer "No" to the question on the effectiveness of the policy accepted the reform when their subjective gain was above -60€ per c.u. For the whole sample (blue curve), this majority acceptance is reached only when subjective gains are positive. This refers back to Section 2.2.2.

Figure L.1: Acceptance rate by subjective gain, informative of the willingness to pay for climate mitigation.

M Ensuring data quality

We took several steps to ensure the best possible data quality. We excluded the 4% of respondents who spent less than 7 minutes on the full survey. We confirm that our main results are robust to choosing another cutoff than 7 minutes (see Table M.1). In order to screen out inattentive respondents, a test for the quality of the responses was inserted, which asked respondents to select "A little" on a Likert scale. The 9% of respondents who failed the test were also excluded, which yields a final sample of 3,002 respondents. Also, when the questions about a reform were spread over different pages, we recalled the details of the reform on each new page. We checked for careless or strange answers on numerical questions, such as income or the size of the household. We flagged 10 respondents with aberrant answers to the size of the household (and capped it to 12) and up to 273 respondents with inconsistent answers, such as a household income smaller than individual income, or a fuel economy higher than 90 liters per 100 km. Being flagged and response time are not significantly

correlated with our variables of interest such as policy support or subjective gain (the correlation is always from -1% and 3%). An examination of the flagged answers suggests that these respondents simply misinterpreted the question. Among these inconsistent answers, 58 respondents have answered more than 10,000€ as their monthly income (despite the word "monthly" being in bold and underlined), with answers in the typical range of French annual incomes. We have divided these figures by 12.

Table M.1: Robustness of main results to the exclusion of poor quality answers.

	Acceptance (A^T)			Correct updating (U)		
	all	> 11 min	not flagged	all	> 11 min	not flagged
Believes does not lose (.53)	0.526	0.547	0.558			
	(0.134)	(0.137)	(0.153)			
Winner, before feedback (.55)				0.542	0.532	0.553
				(0.083)	(0.085)	(0.091)
Initial tax: Approves (.18)				0.180	0.213	0.197
				(0.046)	(0.049)	(0.049)
Original regression: Table (column)	5.2 (1)	5.2 (1)	5.2 (1)	J.1 (2)	J.1 (2)	J.1 (2)
Effective F-statistic	15.2	14.5	11.8			
Whole sample size	2777	3165	2729	2777	3165	2729
Observations	1,978	1,825	1,826	1,370	1,261	1,242
R^2	0.320	0.318	0.326	0.142	0.150	0.155

NOTE: Two of our main results are checked on three alternative sampling restrictions: (1) inclusion of answers < 7 min, (2) exclusion of the 10% of answers < 11 min, and (3) exclusion of flagged (inconsistent) respondents. Weights have been recalculated for each sample. The estimates on the original sample are reported next to variable name. See the original Tables for more details. The correlation between our main variables of interest and response time or being flagged is always below 3%. Standard errors are reported in parentheses. This refers back to Section 2.2.2.

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