# French Attitudes over Climate Change and Climate Policies

Thomas Douenne and Adrien Fabre[1]

**Abstract**

This paper aims to assess the prospects for French climate policies after the Yellow Vests crisis halted the planned increase in the carbon tax. From a large representative survey, we elicit knowledge, perceptions and values over climate change, we examine opinions relative to carbon taxation, and we assess support for other climate policies. Specific attention is given to the link between perceptions of climate change and attitudes towards policies. The paper also studies in details the determinants of attitudes in terms of political and socio-demographic variables. Among many results, we find limited knowledge but high concern for climate change. We also document a large rejection of the carbon tax but majority support for stricter norms and green investments, and reveal the rationales behind these preferences. Our study entails policy recommendations, such as an information campaign on climate change. Indeed, we find that climate awareness increases support for climate policies but no evidence for the formation of opinions through partisan cues as in the US, suggesting that better access to science could foster support for the ecology.

*Keywords:* Climate Policy; Carbon tax; Preferences; Acceptability; France

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[1]Douenne: Paris School of Economics, Université Paris 1 Panthéon-Sorbonne, 48 Boulevard Jourdan, 75014, Paris, France (email: thomas.douenne@psemail.eu); Fabre: Paris School of Economics, Université Paris 1 Panthéon-Sorbonne, 48 Boulevard Jourdan, 75014, Paris, France (email: adrien.fabre@psemail.eu)

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## 1. Introduction

The French government is currently facing a two-sided challenge on climate policies. On the one hand, the protest of the Yellow Vests that originated in November 2018 against the planned doubling in the carbon tax — from 44.6 to 86.2€/t$CO_2$ in 2022 — led the government to halt the increasing trajectory. On the other hand, a large campaign called "Affaire du siècle" started in December 2018 against its inaction for the environment, gathering over two millions signatories in a month. It is so far unclear how the tension between these two *a priori* antagonistic objectives will be resolved. In particular, one may wonder whether the two movements involve distinct groups with opposite interests, or rather reflect a commonly perceived inadequacy of the solution proposed by the government to address the climate threat.

This paper aims to understand French perceptions over both climate change (CC) and the policies that should be implemented to tackle it. To do so, we conducted a new survey on a sample of 3,002 respondents representative of the French population. Our survey contains questions to assess respondents' knowledge about CC and their perceptions over its causes, consequences, and the timing of its effects. As the paper was primarily motivated by the failed attempt to increase the French carbon tax, we examine in detail attitudes towards this instrument. To do so, we propose to respondents a Tax & Dividend policy, i.e. a carbon tax whose revenue would be returned lump-sum uniformly to all adults. This policy differs from the one proposed by the government, since the revenue would have been used to fund the general budget instead. We identify respondents' expected winners and losers, and the

perceived problems and benefits of this instrument. We devote particular attention to the issue of mobility that appears critical in the current debate. We then turn to the support for a carbon tax with alternative uses of the revenue, such as more targeted transfers, earmarking, and double-dividend strategies. We also study the support for other climate policies, including norms and other Pigouvian taxes, and local policies for urban transport. Finally, we identify the determinants of attitudes over both climate change and climate policies, as well as the link between the two.

Our paper contributes to a growing literature on the political economy of climate policies. As an entry point to previous related studies, refer to Drews & van den Bergh (2016) who review the determinants of the support for climate policies and to Carattini et al. (2018) for a comprehensive overview on attitudes over the carbon tax. For a general presentation of attitudes over climate change, we suggest Whitmarsh & Capstick (2018), while for a more specific review on their trends and determinants, we redirect to Brechin (2010). The present paper contributes to the literature by providing a comprehensive analysis of the determinants of attitudes about climate change and climate policies in a country that has recently experienced a carbon tax increase and a large debate ensuing.

Section 2 presents the survey. Section 3 describes attitudes towards climate change. Section 4 focuses on tax & dividend policies, its perception, and the reasons explaining the low support for this policy. Section 5 studies the support for alternative revenue recycling mechanisms as well as for other climate policies. Section 6 examines the heterogeneity in attitudes expressed in the previous sections and characterize its determinants. Finally, section 7 concludes.

## 2. The survey

### *2.1. Presentation of the survey*

We collected 3002 responses in February and March 2019 through the survey company Bilendi. This company maintains a panel of French respondents to whom they can email survey links. Respondents are paid 3€ if they fully complete the survey. The respondents who choose to respond are first filtered through some screening questions which ensure that the final sample is representative along six socio-demographic characteristics: gender, age (5 brackets), education (4), socio-professional category (8), size of town (5), and region (9). The quotas are relaxed by 5% to 10% relative to actual proportions. Table III in Appendix A shows that our sample is still extremely representative. Nonetheless, observations are weighted to correct small differences between sample and population proportions. The median time for completion of the survey was 19 minutes.

The full survey in French can be seen on-line,[2] the questions analyzed are translated in Appendix D, and the code is available on github. Figure 1 presents in a diagram the sequence of questions.

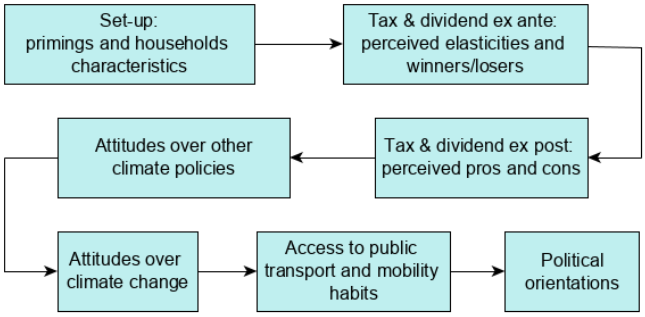


Figure 1: Diagram of the sequence of questions.

The survey starts by asking for households' socio-demographics and energy usage. The distribution of answers are much in-line with official statistics, as shown in Table IV in Appendix A. Then, we describe Tax & Dividend reforms where the revenues of an increase in the French carbon tax by 50€/t$CO_2$ are redistributed uniformly to all adults. We first allocate respondents randomly to a sectoral Tax & Dividend reform, which concerns either gas and domestic fuel (i.e. housing energy), or gasoline and diesel (i.e. transportation energy). Respondents are asked to estimate their reaction to price changes, the reaction of French people, and how much purchasing power they would gain or lose from the policy. To this end, exact price variations and the amount transferred are provided, and respondents can choose among answers given in different brackets. Then, we study perceptions and support for a Tax & Dividend on both sectors combined, before and after providing new information to the respondents. This new information is either that the policy is progressive, or whether their household would win or lose some purchasing power through the reform. Before providing information, we let respondents pick the categories of losers and winners from the reform; and after the information, they choose the benefits and the problems associated with this reform. We study these perceptions of the policy in the present paper, but please refer to our companion paper (Douenne & Fabre, 2019) for details and analyses on the other questions about Tax & Dividend reforms.

### *2.2. Eliciting attitudes towards climate change and climate policies*

After inquiring about the support for Tax & Dividend, we ask respondents to assess on a Likert scale different ways to recycle the revenues of a carbon tax. On another Likert scale, we examine opinions on other climate policies,

[2] preferences-pol.fr/doc_q.php#_e

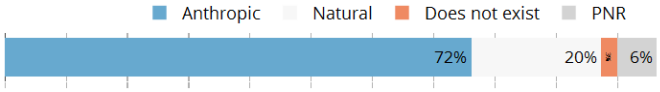


Figure 2: Perceived cause of climate change.

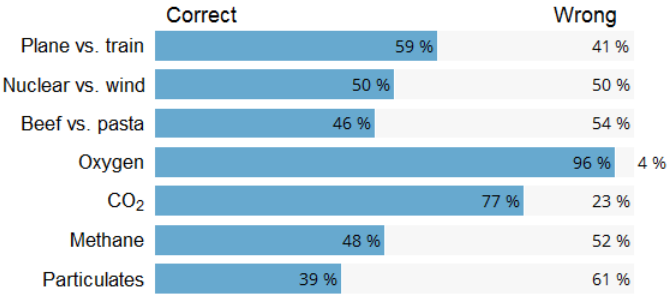


Figure 3: Perceived factors of climate change.

notably new norms or Pigouvian taxes. We then measure respondents' knowledge about climate change by asking for its origin (anthropic or natural), its causes (in terms of gases and activities), which region it will most affect (between India and the European Union), and what reduction of emissions is needed by 2050 to respect the +2°C target. At the same time, we assess attitudes over climate change by asking respondents about the frequency with which they talk about it, the gravity of its consequences, the generations it will severely effect, and the entities responsible for its occurrence. We continue by surveying if and how climate change influences one's decision to have a child, under which conditions one would be ready to change their lifestyle to fight climate change, and whether one would be ready to adopt a sustainable lifestyle if policies were aligned to this goal. We also ask questions about shale gas and diesel taxation. Then, we evaluate the respondents access to public transport, their mobility habits, and if there is room for changing these habits. Finally, we ask for their political preferences, including their positioning in relation to the Yellow Vests. The survey ends with a text box where the respondents can leave a comment.

## 3. Attitudes over Climate Change

### *3.1. Knowledge*

As shown in Figure 2, the share of French people who do not believe in climate change (CC) is marginal (4%), and the proportion who prefer not to respond (PNR) is small (6%). Overall, knowledge that CC is anthropic is widespread (72%), despite wording expected to provide a lower bound on this figure (Motta et al., 2019). The level of knowledge on the anthropic origin of CC is similar to that of other Western countries (Leiserowitz, 2007; Lee et al., 2015; Stokes et al., 2015): it is 66% in the U.S. (Gallup, 2019) for example. However, knowledge on climate science appears limited. Although 77% of people correctly tick "$CO_2$" as a greenhouse gas (GhG), Figure 3 shows

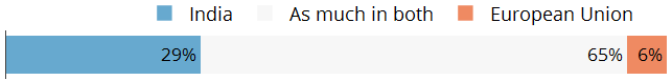


Figure 4: Perceived region where climate change impacts will be the most serious.

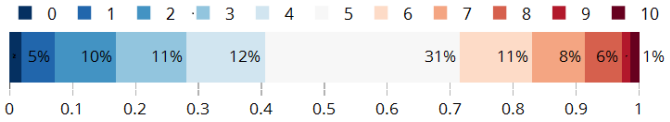


Figure 5: Perceived GhG emission p.c. required in 2050 to limit global warming to +2°C (in $tCO_2eq/yr$), given that it is now 10.

that almost as many people tick particulate matter (39%) as methane (48%). This mistake likely reflects a common confusion between air pollution and climate change, both conflated to the broader notion of "pollution". Admittedly, understanding the impacts of activities is more useful than erudition about chemical factors, but here again, knowledge is quite low. We assess such awareness using pairs of comparable activities whose GhG footprint differ by a factor 20 (beef steak vs. pasta, plane vs. train) or whose footprint are similar (nuclear vs. wind power).[3] We ask whether it is true that one activity emits 20 times more GhG than the other, as a way to express precisely that one is "much more" polluting than the other. For each pair, around half of the sample is correct. The bulk of respondents pick two correct answers out of three (44%), but more get them all wrong (19%) than all right (15%). Figure 4 shows that although five times more people (correctly[4]) believe that India will face more serious climate impacts than the European Union, 65% still think that both regions will face as much damage.

Not only do most people fail to fully understand the factors and consequences of CC, but they also fail to grasp the degree of reaction needed to tackle it. When informed that "each French person emits on average the equivalent of 10 tons of $CO_2$ per year" and asked what the figure should be in 2050 to "hope to contain global warming to +2°C in 2100 (if all countries did the same)", 59% answer 5 or more (see Figure 5). Only 17% select a correct answer: 0, 1 or 2 (see Appendix B for why these are correct).

Millner & Ollivier (2016) propose several mechanisms to explain people's lack of understanding about climate change: in addition to the difficulty of grasping gradual changes, they emphasize the complexity of drawing a causal link between diffuse causes and distant consequences. Failing to assimilate the underlying channels may blur the link between people's own behavior and consequences for the climate. One related element that may explain why people ignore the basics of climate science is that they do not feel directly affected by CC. In fact, 62%

[3] Appendix B.1 details how the figures were obtained.

[4] See e.g. vulnerability indexes (Climate Vulnerable Forum, 2012; Guillaumont, 2015; Closset et al., 2018).

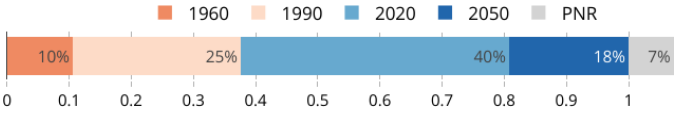


Figure 6: Perceived date of birth of first generation severely affected by CC.

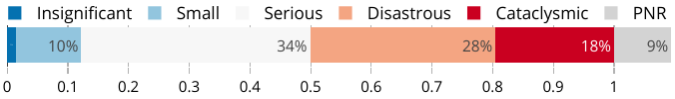


Figure 7: Perceived gravity of climate change.

think that the first generation seriously affected by CC is yet to be born (Figure 6).

### *3.2. Opinions*

Even though many French people might not think they will suffer themselves from CC, a vast majority foresees worrying consequences if humanity does nothing to limit it. Figure 7 shows that 19% see the impacts as "cataclysmic, humankind would disappear", 18% as "disastrous, lifestyles would be largely altered", 28% as "grave, because there would be more natural disasters", while only 11% think damages would be "small, because humans would be able to live with it" or "insignificant, or even beneficial". These results echo a survey from ADEME (2018) which shows that 63% of French people think that "living conditions will be extremely harsh" in France in 50 years and that 57% do not think CC "will be limited to acceptable levels by the end of the century". Despite — or perhaps due to — widespread hopelessness, 34% almost never talk about CC (Figure 8). 27% talk about CC several times per month, which can give a sense of the share of people who regularly engage in long-term thinking. The relatively low amount of discussion around an issue largely perceived as a serious threat may be understood as a way to flee from one's moral duty and to protect one's lifestyle.[5] Indeed,

[5] As a recent literature has shown, people tend to discard information perceived as bad news and display what Sharot et al. (2011) call "unrealistic optimism in front of reality".

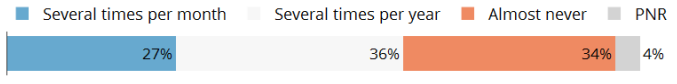


Figure 8: Frequency at which respondents talk about climate change.

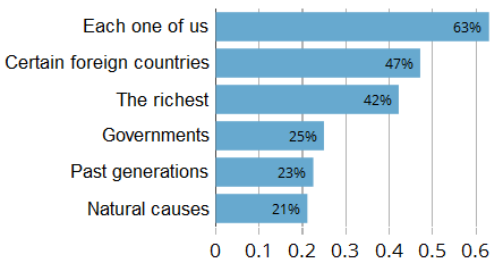


Figure 9: Perceived responsible for climate change.

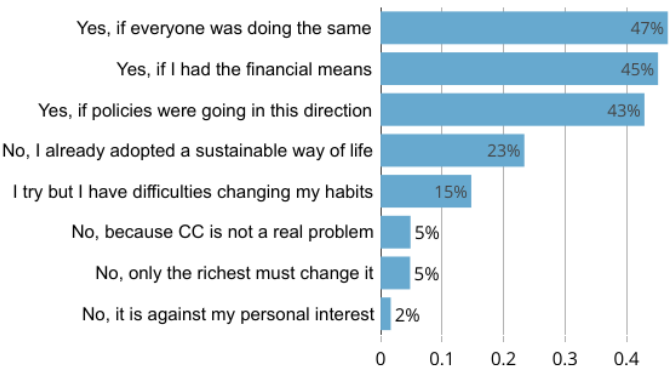


Figure 10: Respondent could change their lifestyle under a condition.

63% acknowledge that "each one of us" is responsible for CC, and less people ascribe the responsibility to "certain foreign countries" (47%), "the richest" (42%), or any other agent (see Figure 9).

Overall, these results indicate that most people understand the fundamentals of climate issues, including the root causes and the scale of the problem, but that only a minority has thought of CC deeply enough to comprehend its factors and the pathways to tackle it.

### *3.3. The Reaction Needed*

Given that many people may not realize the extent of the transition needed to reach sustainability, and that others may be discouraged precisely by the sheer magnitude of such a transition, we can wonder how willing people are to contribute to its success. An encouraging finding for the transition is that 65% are "willing to adopt an ecological lifestyle (i.e. eat little red meat and make sure to use almost no gasoline, diesel nor kerosene)", assuming that "all states in the world agree to firmly fight climate change, notably through a transition to renewable energy, by making the richest contribute, and imagining that France would expand the supply of non-polluting transport very widely", while only 17% answer "No" (the others do not take a side). While the phrasing removes most grounds against a change in lifestyle, we inquire under which conditions people would be willing to adopt such a change (see Figure 10). It may be a manifestation of "warm glow" or of a lack of knowledge regarding the efforts needed, but 36% affirm that they have "already adopted a sustainable way of life" and/or that they "try to do so", while only 11% refuse to change their lifestyle (and barely 2% justify it by their self-interest). 82% of respondents would be willing to change their lifestyle under at least one of the three conditions proposed: sufficient financial resources, an alignment of policies to this goal, or an adjustment of others' behavior (about 45% each).

Other French representative surveys find similar results and indicate which efforts people are most ready to

make.[6] ADEME (2018) shows that the efforts people are making or could easily make are also the least efficient to reduce GhG emissions: most people cite waste sorting (89%) or buying seasonal vegetables (87%), but fewer mention walking or cycling (55%) or using public transport (49%) instead of driving. Logically, 62% thus think that "only legislative constraint is effective in making a successful transition and forcing everyone to change their consumption habits" (OpinionWay, 2019). The extent to which people support such legislation is documented by Bréchon et al. (2019): 50% favour the protection of the environment at the expense of the economy and employment. In the U.S., Gallup surveys show that this prioritization depends largely on the economic conditions, in accordance with Brulle et al. (2012) and Shum (2012): the figure is 65% in 2019 but was 38% in 2010.

Finally, a substantial fraction of people incorporates ecological constraints in their life choices. Indeed, 15% call themselves ecologist (the most picked political identity outside of the left-right spectrum, see Appendix E), 23% claim they already adopted a sustainable way of life, and 20% say the CC "has had or will have an influence in their decision to have a child". Among them, 86% justify it because they "don't want [their] child to live in a devastated world", and 37% "because each additional human aggravates climate change".

## 4. Attitudes over Carbon Tax and Dividend

Most French people are aware and concerned about climate change and claim to be willing to exert efforts to fight it. Yet, the government's attempt to introduce a carbon tax to deal with French emissions resulted in a widespread popular protest. To understand this paradox, our survey presents to respondents a Tax & Dividend policy: an increase of 50€/$tCO_2$ in the current French carbon tax, with a uniform lump-sum redistribution of the additional revenue to all adults. This policy differs from the official one whose revenue was mostly used to fund the general budget. Respondents are given the associated increase in energy prices so that the direct costs are salient: +13% (resp. +15%) for gas (resp. domestic fuel), and +0.11€ (resp. +0.13€) for a liter of gasoline (resp. diesel). They are also told that the transfer would amount to 110€ per adult annually.

### *4.1. Widespread rejection*

French people would largely reject the proposed policy. Only 10% of our respondents declare they would approve it, while 70% say they would not (see Figure 11). As shown in our companion paper (Douenne & Fabre, 2019), this rejection can be explained by erroneous perceptions

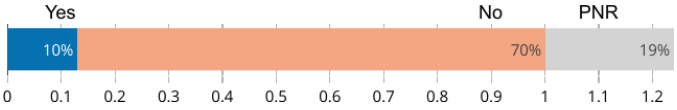


Figure 11: Approval of Tax & Dividend.

about the policy's outcome, such as an overestimation of its impact on one's purchasing power. For instance, 30% of people who use neither gas nor domestic fuel believe their household would lose from an equally redistributed increase in taxes on these goods. Interestingly, the salience of costs appears critical in people's answer. At a later stage of the survey, we ask respondents whether they would agree to increase the carbon tax if the revenue was returned to all households, without mentioning the impact on prices. The question is asked along with a package of other environmental policies (see section 5). In this case — where the benefits are more salient than the costs — we find a much higher approval rate of 37%. Another survey conducted in March 2019 (OpinionWay, 2019) assesses acceptance for a *reintroduction* of the carbon tax increase in 2021. They find intermediary results with an approval rate of 21%.

The low level of acceptance observed partly results from recent events. In July 2018, before the protests of the Yellow Vests, ADEME (2018) found that 48% of French people thought is was desirable to increase the carbon tax, a figure similar to those of other countries (Brechin, 2010). At that time, the carbon tax had been in place for more than four years, but low oil prices made its existence little known. A few months later, in a context of higher barrel prices, the tax was put under the spotlight and its associated costs became more salient, fostering the strong opposition.

### *4.2. Perceived winners and losers*

Figure 12 represents the share of respondents who expect different household categories to win or lose from the policy. Income appears to be the most critical divide, with a non-monotonic relationship. 30% of respondents expect the richest to win while only 2% think they would lose. On the contrary, 40% more people think that the poorest would lose rather than win, a difference even higher for the middle class — the category most expected to lose — at 53%. To half of respondents, we framed the question about winners and losers specifically in terms of "purchasing power". The objective was to see if some categories were commonly seen as losing in welfare although they could gain in monetary terms, or conversely. The results look very much alike for both formulations, except that the shares of people expecting poorer households to gain (5.8%) and richer households to lose (0.9%) are significantly larger when asked in terms of purchasing power: 10.2% and 2.1%, respectively. Overall, respondents perceive the Tax & Dividend as regressive. As shown by a large body of literature (e.g. West & Williams, 2004; Bento

[6] OpinionWay survey was conducted in March 2019 on a representative sample of 1,042 French adults, and ADEME (2018) in September 2018 on a representative sample of 1,557 French adults.

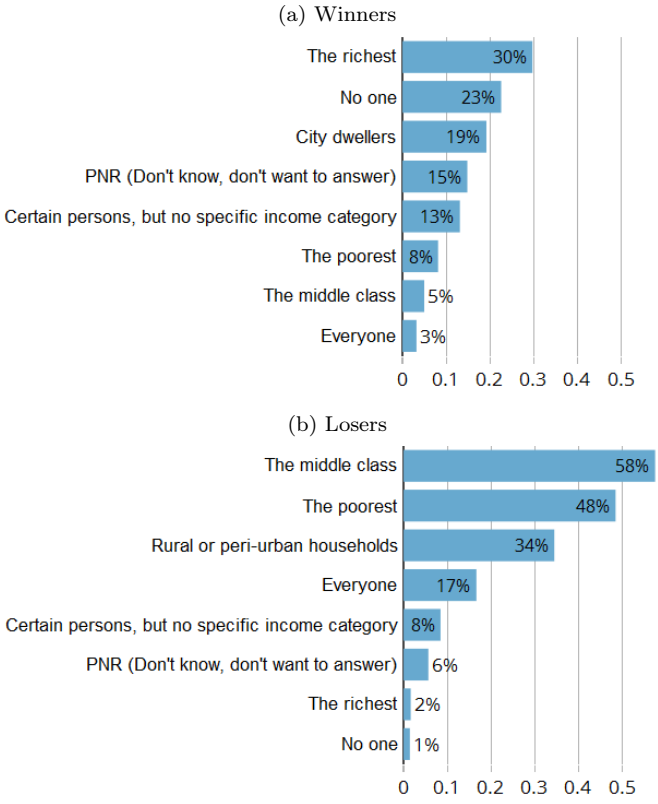


Figure 12: Perceived winners and losers from Tax & Dividend

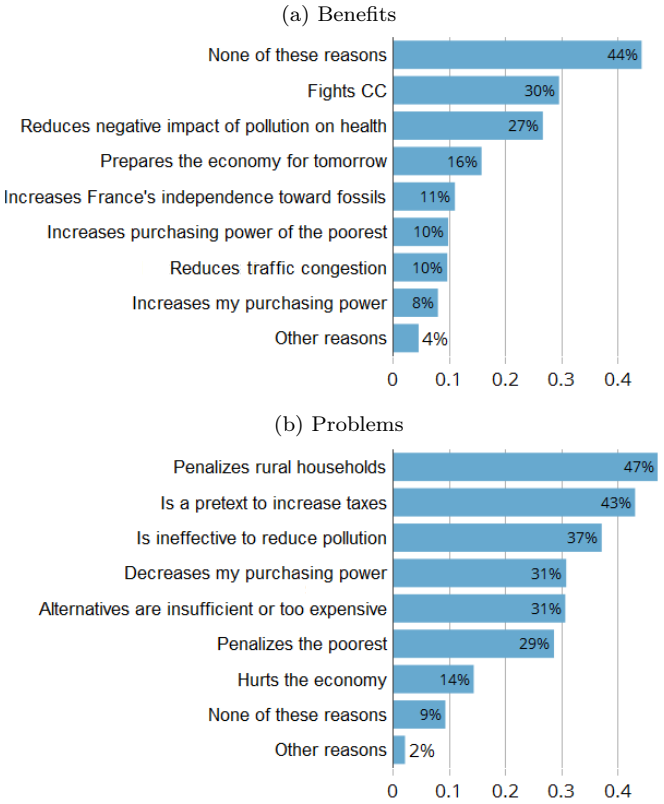


Figure 13: Perceived benefits and problems from Tax & Dividend

et al., 2009; Williams et al., 2015), and more specifically in our companion paper (Douenne & Fabre, 2019), these beliefs are at odds with the true distributive effects of this proposed policy.

Beyond the income dimension, people tend to identify city dwellers as potential winners from the Tax & Dividend (third position at 19%), while rural and peri-urban households are rather expected to lose (third position at 34%). We also see that people report on average more categories for expected losers than winners: 1.74 vs. 1.16. The high ranks of "no one" for winners (second) and of "everyone" for losers (fourth) further suggest that respondents do not see our policy as a zero-sum game.

### *4.3. Perceived pros and cons*

Previous studies have highlighted that distributive effects are a critical determinant of carbon tax acceptance (e.g. Kallbekken & Sælen, 2011; Brannlund & Persson, 2012; Gevrek & Uyduranoglu, 2015). When asked about the problems associated with the Tax & Dividend, the main response is that the tax would penalize rural households (47%). Interestingly, this concern comes before the threat that the tax could penalize the poorest (sixth position with 29%), although more people report the poorest as a category of people expected to lose. The second and third concerns are that the policy is simply a pretext to increase taxes (43%) — a worry documented by Dresner et al. (2006) and Klok et al. (2006) — and that it would be ineffective to reduce pollution (37%). Related to this last point is the perceived lack of alternatives, seen as insufficient or too expensive (31%). This problem has been previously stressed by Kallbekken & Aasen (2010) in a focus group study: people do not see the point of taxing fossil fuels if they cannot substitute for other technologies. This last reason is stated as frequently as concerns over the impact on one's own purchasing power (fourth with 31%). As shown in Douenne & Fabre (2019), self-interest largely affects acceptance of the Tax & Dividend, but this concern could sound too egoistic when stated in a direct way. While previous studies have pointed out concerns over the negative impact of carbon taxation on the economy (e.g. Thalmann, 2004; Carattini et al., 2017), this problem comes last (14%) and does not seem to represent an important obstacle for public support in the current context.

Respondents are suggested to pick at most three answers among both problems and benefits. On average, respondents pick 2.36 problems — and 53% pick at least 3 — against 1.14 benefits, excluding the most popular: "None of these reasons" (44%). This option comes far ahead of the second and third, "fight climate change" (30%) and "reduces negative impact of pollution on health" (27%). Still, environmental benefits are much more cited than economic ones. This result is likely due to people's pessimism about the outcome of the policy, but it might also reflect the limited importance given to economic consequences of the

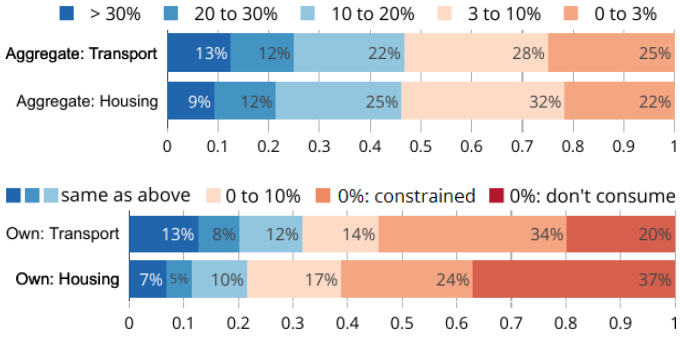


Figure 14: Perceived aggregate and own elasticities.

carbon tax, as already suggested by problems commonly cited.

### *4.4. Consumption and mobility constraints*

The perceived problems identified above suggest a rationale for people's opposition towards carbon taxation: if people think the tax is ineffective, because their consumption is constrained and affordable alternatives are lacking, then taxing carbon can be perceived as a pretext to increase taxes.

#### *4.4.1. Perceived elasticities*

In order to understand to what extent people feel constrained with respect to their energy consumption, we elicit their subjective price elasticity for transport and domestic energies. To do so, we adopt the phrasing of Baranzini & Carattini (2017) and ask the expected decrease in energy consumption that would follow an increase in prices. To avoid dealing with small percentages, which people usually find more difficult to compare, we ask for the reaction to a 30% increase in the price of heating (or equivalently, an increase of 0.50€ per liter in fuel prices). Although sufficiently high to foster a significant response on demand, these changes are realistic in the medium run, and should not lead people to report long-term elasticities. Respondents may select their answer among 5 brackets. They are asked to estimate their own reaction as well as that of French people. Figure 14 presents the results.

54% (resp. 61%) of respondents consider that such an increase in prices would not lead them to reduce their transport (resp. domestic) energy consumption. This expected inelastic behavior is mainly due to mobility constraints for transport (64% of cases) while it mostly reflects

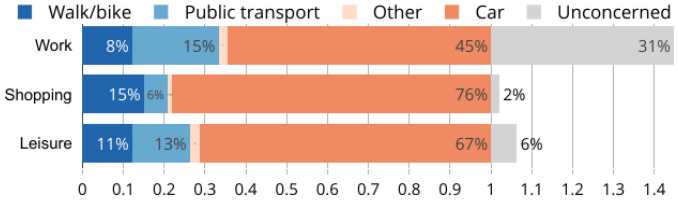


Figure 15: Mode of transportation by activity.

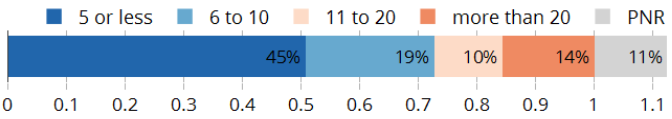


Figure 16: Walking distance to the nearest stop, in minutes.

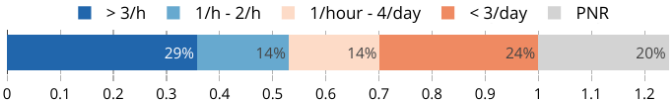


Figure 17: Frequency of public transport at the nearest stop.

a non-fossil heating type for housing (61%). Excluding people reporting inelastic behavior because of insignificant initial consumption, about 40% of people feel constrained and expect to not lower their consumption following price increases. Still, respondents perceive transport fuel price elasticity of French people at −0.45 on average, and their own elasticity at a consistent −0.36 (after re-weighting by fuel expenditures). Concerning housing energy, aggregate and personal subjective elasticities are respectively −0.43 and −0.33. Overall, these subjective elasticities compare well to the ones found in the literature for French households, although they are slightly over-estimated (in absolute value) for housing.[7]

#### *4.4.2. Mobility and public transport*

To assess the level of dependence on automobiles, which we include as a determinant for preferences in Section 6, we study mobility habits and access to public transport. Figure 15 indicates that 65% of employed people drive to work, and that car usage is even more common for grocery shopping or leisure activities. This figure is confirmed by the national transport survey ENTD (2008) conducted by Insee and analyzed in Pappalardo et al. (2010), which reveals that a majority still uses a car for trips of 1 to 2 km. Even though 73% live within a 10 minute walk to a public transit stop (Figure 16), coverage and frequency of public transport is often too low (Figure 17) to compete with the speed, comfort, and flexibility of automobiles. Indeed, 58% of those who commute by car declare that they could neither substitute it with public transport nor walking or cycling, and only 15% could use one

[7] For transports, estimates from the literature lie around −0.4 (Clerc & Marcus, 2009; Bureau, 2011; Douenne, 2018). For housing, the values are lower, typically around −0.2 (Douenne, 2018; Clerc & Marcus, 2009).

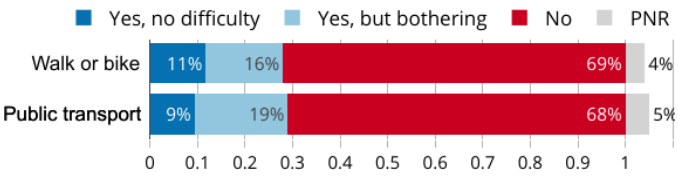


Figure 18: Among those who commute to work by car, possibility to change the transportation mode, depending on the alternative.

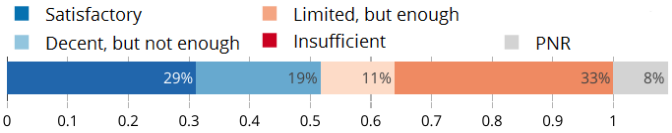


Figure 19: Supply of public transport where the respondent lives.

of these alternative without major difficulties (Figure 18). Further evidence indicates that the lack of alternatives is a main factor for car usage, besides apparent taste for a vehicle that remains a symbol of freedom. Figure 19 shows that 52% of respondents state that supply of public transport where they live is "insufficient" or "decent, but should be increased", while 40% find it "satisfactory" or "limited, but sufficient". From this perspective, "green public investments and carbon taxes appear to be complementary, and in the timing of climate policy it would be justified to carry out the former before implementing the latter", as Bureau et al. (2019) suggest. Alongside an increase in the supply of alternatives, climate policies could also address the demand for mobility, e.g. by revitalizing town centers and limiting urban sprawl.

## 5. Attitudes over Other Policies

The previous section has shown that our Tax & Dividend was largely rejected by French people. As climate policies are urgently needed, it appears necessary to assess whether other designs and instruments would be met with a higher support. This section first examines public opinion about several alternative uses for the carbon tax revenue and then turns to other environmental and climate policies.

### *5.1. Preferred Revenue Recycling*

We asked respondents to what extent they would accept an increase in the carbon tax for different uses of the revenue. As the exact cost of the tax was not specified, the benefits of the revenue recycling were made relatively more salient, which explains higher acceptance rates compared to our Tax & Dividend. Still, this question enables to compare answers relative to one another.

#### *5.1.1. Investments in energy transition*

Figure 20 reports people's responses to each proposed scenario. Overall, the preferred revenue recyclings are investments in the energy transition. This result is consistent with various papers showing that earmarking the revenue of the tax for environmental purposes largely increases public support (for a review of the literature, see for instance Kallbekken & Aasen, 2010; Carattini et al., 2018). As people tend to see carbon taxation as effective only if it finances green investments (Sælen & Kallbekken, 2011), these mechanisms legitimize the implementation of a tax and increase its acceptance. In addition, the large approval for a policy investing in non-polluting transport can be explained by people's desire for mobility alternatives, the lack of which was identified as an important problem with our Tax & Dividend (see section 4).

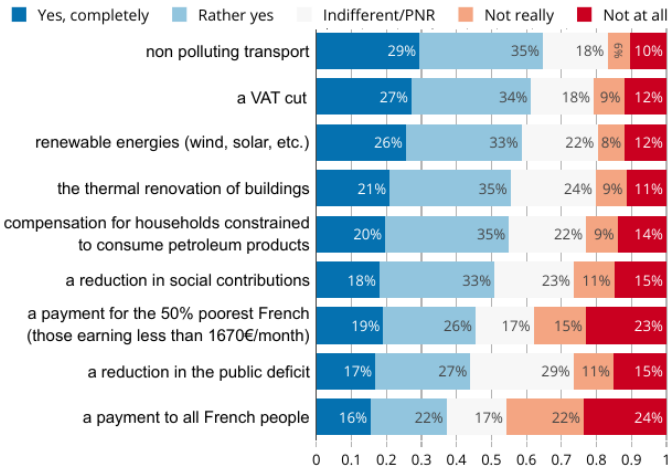


Figure 20: Approval of a carbon tax if its revenue finances...

#### *5.1.2. Transfers to households*

While previous literature has shown that distributive concerns matter for carbon tax approval, the common tool proposed by economists to address this issue — lump-sum transfers — is not met with resounding support. Out of the nine proposed mechanisms, the standard flat recycling comes last (with 37% approval), and a transfer targeted to the bottom 50% comes seventh (46%). Consistent with our previous finding that people are concerned that the carbon tax may penalize rural and peri-urban households, the preferred "lump-sum" transfer is the one targeted to people constrained with respect to their consumption of petroleum products (fifth with 55% approval). These results echo the findings of Kallbekken et al. (2011) who showed that people tend to prefer more narrowly targeted revenue recycling, possibly because of distributional concerns.

The relatively low support for compensation mechanisms should however not be understood as a lack of concern about purchasing power or distributive effects. As shown in section 4, the distributive properties of lump-sum transfers are not well understood. Perhaps surprisingly, the second preferred mechanism for revenue recycling is a reduction in the VAT rate (61% approval). The main rationales for this support are the benefits to one's purchasing power and the perceived distributive effects. As the VAT is known to be a regressive tax, people may perceive it fair to compensate an increase in the regressive carbon tax with a decrease in the VAT. Although such a mechanism would be less favorable to poorer households — who spend less in VAT in absolute value, and would therefore receive less than from a uniform transfer — it may not be perceived as such.

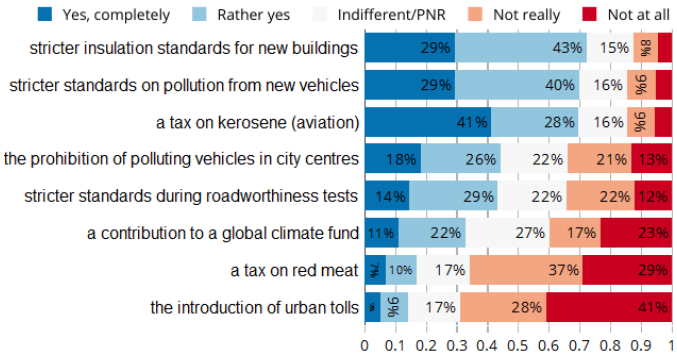


Figure 21: Approval of different climate policies.

### 5.1.3. Double dividend and public deficit

The last two options propose to use the carbon tax revenue to reduce social contributions, or the public deficit. These mechanisms come respectively in sixth and eighth position with 51% and 44% of approval. These results can be linked to the low level of concern regarding the impact of a carbon tax on the economy documented in section 4. They are also consistent with previous focus group studies (e.g. Kallbekken & Aasen, 2010), including in France where Deroubaix & Lévèque (2006) found that people did not understand why the revenue of an environmental tax reform should be used to tackle unemployment.

## 5.2. Other Instruments

Although economists have shown that alternative instruments are usually less cost-effective than Pigouvian taxes (e.g. Goulder & Parry, 2008), they may become relevant in a context where there is a binding acceptability constraint. To elicit people's preferred environmental policies, we ask respondents whether they would support eight different propositions. To make these questions easier to answer, the exact mechanisms and their associated costs and benefits are unspecified. The answers reported should therefore be taken cautiously as people could change their mind once faced with clear trade-offs. Still, this exercise is informative about people's first reactions to different proposals.

### 5.2.1. Other Pigouvian taxes

Figure 21 shows that among the eight options, the third most approved (70%) is a tax on kerosene. It is also the option receiving the strongest support by far (41% of "Yes, completely"). The main rationale could be a broadly perceived effectiveness of the tax if people view aviation as an important source of emissions, and the distributive effect of such policy since richer people fly more.[8] In sharp contrast, only 17% of our survey respondents approve a tax on red meat, a policy ranked second-to-last. One could explain this lower acceptance rate by the belief that such policy would be ineffective, as we have shown in section 3 that less than half of respondents know that beef has a high carbon footprint. Additional reasons for its rejection could be the perceived negative impact on purchasing power, and the feeling that the policy is too coercive and targets a behavior difficult to change (de Groot & Schuitema, 2012). Overall, this evidence confirms that people are not opposed to Pigouvian taxes *per se*, and that acceptance varies significantly depending on the target and the perceived outcome of the instrument.

### 5.2.2. Norms

Among all proposed instruments, the two most approved are norms. 72% and 70% of respondents declared being in favor of stricter standards for the insulation of new buildings and for the pollution of new vehicles, respectively. It is unclear to what extent people are aware of the "hidden costs" of such policies. For instance, fuel economy standards in the US have been estimated to be three to six times more costly than a tax on gasoline for similar abatement levels (Jacobsen, 2013). In addition to their efficiency costs, these standards are also regressive, possibly more than gasoline taxes (Jacobsen, 2013; Davis & Knittel, 2019; Levinson, 2019). The exact properties of these instruments are of course specific to their design, but it is likely that their popularity partly reflects the underestimation of their costs. For urban transport policies as well, standards are preferred to price instruments. While the prohibition of polluting vehicles in city centers comes fourth on the list of preferred options with 44% approval, the introduction of urban tolls comes last with only 14%. In a survey on urban road pricing, Jones (1998) identifies the main deterrent for these mechanisms. While some are specific to congestion charges, the other perceived problems are very much alike those identified for our Tax & Dividend: ineffectiveness, unfairness and the feeling that it is just another tax.

### 5.2.3. Diesel taxation

The strong opposition of the Yellow Vests against energy taxes did not only lead the government to reverse the planned carbon tax trajectory. The additional tax increases initially scheduled for diesel — to catch-up with the currently higher rates imposed on gasoline despite diesel's high social cost from air pollution — have also been abandoned.[9] In our survey, we ask respondents whether they

[8] In France in 2008, people in the top income decile travelled by plane about seven times more than the bottom 50% of the income distribution (Pappalardo et al., 2010). Furthermore, kerosene's emissions are taxed only through the EU-ETS, hence at a far lower rate than diesel and gasoline. This discrepancy has been highlighted in the public debate.

[9] Three increases of +0.026€/L were initially scheduled for January 2019, 2020 and 2021.

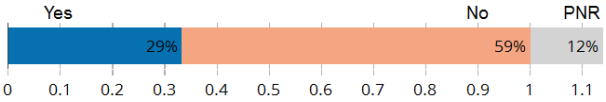


Figure 22: Approval of a catching-up of the diesel tax.

would therefore accept an increase in diesel tax to catch up with that of gasoline. As illustrated by Figure 22, 59% of respondents answer they would not, while 29% say they would (12% "PNR"). Among the 57% of households who own a diesel vehicle, the opposition augments to 80%. The geographic difference is also striking as 73% of rural households would be opposed, vs. only 40% of those living in the Paris agglomeration. As shown in our online Appendix, these two determinants persist when controlling for many other criteria and clearly appear, along with political orientation, as the most important divides with respect to diesel taxation.

#### *5.2.4. Shale gas exploitation*

The energy transition implies a shift away from fossil fuels, but it is sometimes argued that, at least in the short run, a substitution from coal to shale gas would reduce emissions as the former pollutes less than the latter. As France holds among the largest reserves of shale gas in Europe, its exploitation could be exported and *possibly* substitute for more carbon intensive fuels.[10] Before asking for approval of shale gas exploitation, we first provide respondents with trade-offs between the possible climate benefits relative to coal and the potential negative effects on water quality at the local level. Then, using respondents' zipcode, we inform them whether their district would possibly be concerned by shale gas exploitation.[11] 59% of respondents declare being opposed to exploitation, while 16% are in favor. As shown in our online Appendix, acceptance (defined as approval or "PNR") appears lower by 5 p.p. *ceteris paribus* when the district is concerned. When asked about the main benefit of shale gas exploitation, 26% answer it would "create jobs and boost employment in the districts concerned", 18% that it would limit climate change, and none of these reasons for the other 56%. Finally, 25% of respondents think it is valid to say that shale gas exploitation would limit climate change, as "any decrease in emissions goes in the right direction", while 43% think it is not, as "emissions should be stopped, not just slowed down".

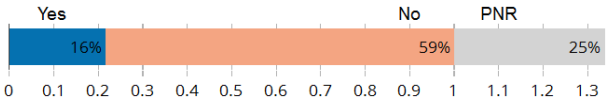


Figure 23: Approval of shale gas extraction in France.

[10] See EIA/AIE (2013) for an assessment of recoverable reserves, and Saussey (2018) for a nuanced view on the prospects for such exploitation in France.

[11] Source: exploitation and exploration permits, and exploration permit applications in 2011, as reported by Le Figaro. Original source is Direction Générale de l'Énergie et du Climat, but the archive is not accessible.

## 6. Determinants of Attitudes

To understand what factors foster environmentally-friendly attitudes, we explore the socio-demographic determinants of attitudes over CC, the correlations between knowledge and perception of CC, and how these attitudes over CC as well as socio-demographics shape preferences for policies.

### *6.1. Attitudes over climate change*

Table I shows the main socio-demographic determinants of different attitudes towards CC: the knowledge that CC is anthropic (columns 1-3), an index of knowledge over CC (4) and the perception that CC is "disastrous" or "cataclysmic" (5-6). To build the index of knowledge, we first compute a score for the question asking the emission target p.c. required to limit CC (see section 3.1). Denoting $t$ as the respondent's answer (from 0 to 10 $tCO_2/yr$), we define the score as:

$$\text{score emission target} = \begin{cases} 3 & \text{if } t \leq 2 \\ 2 & \text{if } t \in [3;4] \\ 1 & \text{if } t \in [5;6] \\ 0 & \text{if } t \geq 7 \end{cases} \quad (1)$$

and we then aggregate this score with other answers:

$$\begin{aligned} \text{knowledge} = {} & \text{score factors} + \text{score emission target} \\ & + 3 \cdot (\text{CC anthropic} - \text{CC doesn't exist}) \\ & + \text{India most affected} \end{aligned} \quad (2)$$

where "score factors" is the sum of correct answers to factors of CC (see Figure 3), and the remaining variables in the formula are dummies. The original index ranges from $-3$ (no respondent) to $+13$ (22 respondents), and has quartiles of 6, 8 and 9. In the regressions, we normalize this index by subtracting the mean (7.6) and dividing by the standard deviation (2.5). Finally, we run OLS regressions of the three attitudes over CC on various socio-demographics, household characteristics, and political orientation. We report only the most relevant variables, but describe the entire list of covariates in Appendix C.1. We confirm that logistic regressions yield similar results (see online Appendix).

The best predictors of attitudes over CC corresponds with political orientation, and in particular identifying as an ecologist, one's positioning towards the Yellow Vests, and left-right leaning. Political orientation shapes different attitudes in a consistent manner: being ecologist, more left-wing or less supportive of the Yellow Vests is always associated with higher "concern over CC", i.e. better knowledge and higher pessimism. Interest into politics (measured on a scale "almost not"/"a little"/"a lot") also leads to higher concern, but to a lesser extent. Two observations on the left-right leaning deserve comment. First, the 40% of people indeterminate relative to this spectrum (see

Table I: Determinants of attitudes towards climate change (CC).

| | CC is anthropic | | | Knowledge on CC | CC is disastrous | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Interest in politics (0 to 2) | 0.032** | | | 0.346*** | 0.051*** | |
| | (0.013) | | | (0.071) | (0.014) | |
| Ecologist | 0.135*** | | | 1.007*** | 0.192*** | |
| | (0.024) | | | (0.134) | (0.027) | |
| Yellow Vests: PNR | −0.098*** | | | −0.355** | −0.093*** | |
| | (0.033) | | | (0.179) | (0.036) | |
| Yellow Vests: understands | −0.038* | | | −0.251** | −0.051** | |
| | (0.022) | | | (0.122) | (0.024) | |
| Yellow Vests: supports | −0.098*** | | | −0.570*** | −0.061** | |
| | (0.024) | | | (0.130) | (0.026) | |
| Yellow Vests: is part | −0.207*** | | | −1.308*** | −0.105** | |
| | (0.043) | | | (0.236) | (0.047) | |
| Left-right: Extreme-left | 0.111** | | | 0.694** | 0.075 | |
| | (0.056) | | | (0.309) | (0.062) | |
| Left-right: Left | 0.074*** | | −0.038 | 0.338** | 0.099*** | −0.028 |
| | (0.027) | | (0.059) | (0.149) | (0.030) | (0.065) |
| Left-right: Center | 0.013 | | −0.069 | 0.245 | 0.021 | −0.091 |
| | (0.030) | | (0.069) | (0.165) | (0.033) | (0.076) |
| Left-right: Right | −0.029 | | −0.123 | −0.098 | −0.023 | −0.142 |
| | (0.029) | | (0.081) | (0.158) | (0.032) | (0.089) |
| Left-right: Extreme-right | −0.014 | | −0.128 | −0.288 | 0.025 | −0.088 |
| | (0.034) | | (0.094) | (0.187) | (0.037) | (0.103) |
| Diploma: *CAP* or *BEP* | 0.040* | | 0.011 | −0.002 | −0.014 | −0.004 |
| | (0.022) | | (0.029) | (0.124) | (0.025) | (0.031) |
| Diploma: *Baccalauréat* | 0.065** | | 0.122*** | 0.376** | 0.030 | 0.165*** |
| | (0.027) | | (0.033) | (0.147) | (0.029) | (0.036) |
| Diploma: Higher | 0.086*** | | 0.152*** | 0.666*** | 0.096*** | 0.236*** |
| | (0.027) | | (0.027) | (0.151) | (0.030) | (0.030) |
| Diploma × Left-right | | | −0.005 | | | −0.005 |
| | | | (0.008) | | | (0.009) |
| Age: 25 – 34 | 0.050 | −0.030 | | 0.334 | 0.021 | |
| | (0.041) | (0.032) | | (0.227) | (0.045) | |
| Age: 35 – 49 | 0.002 | −0.088*** | | 0.249 | 0.032 | |
| | (0.041) | (0.029) | | (0.225) | (0.045) | |
| Age: 50 – 64 | 0.009 | −0.092*** | | 0.199 | −0.032 | |
| | (0.044) | (0.029) | | (0.244) | (0.049) | |
| Age: ≥ 65 | −0.106** | −0.197*** | | −0.094 | −0.092 | |
| | (0.053) | (0.029) | | (0.290) | (0.058) | |
| Income (k€/month) | −0.008 | | | −0.051 | −0.012 | |
| | (0.008) | | | (0.043) | (0.009) | |
| Sex: Male | −0.023 | | | 0.368*** | −0.004 | |
| | (0.018) | | | (0.098) | (0.020) | |
| Size of town (1 to 5) | 0.004 | | | −0.010 | 0.006 | |
| | (0.008) | | | (0.043) | (0.009) | |
| Frequency of public transit | 0.016** | | | 0.118*** | 0.007 | |
| | (0.007) | | | (0.041) | (0.008) | |
| Additional covariates | ✓ | | | ✓ | ✓ | |
| Observations | 3,002 | 3,002 | 1,813 | 3,002 | 3,002 | 1,813 |
| $R^2$ | 0.104 | 0.021 | 0.042 | 0.154 | 0.118 | 0.065 |

*p<0.1; **p<0.05; ***p<0.01

Note: Standard errors are reported in parentheses. Interaction term is computed using numeric variables. Omitted modalities are: *Yellow Vests: opposes*, *Left-right: Indeterminate*, *Diploma: Brevet or no diploma*, *Age: 18 – 24*. Additional covariates are defined in Appendix C.1.

Appendix E for the descriptive statistics) have attitudes close to the center-right. Second, the variations predicted in the dependent variables are as high across the Yellow Vests positionings as across the traditional left-right spectrum. For instance, knowledge on CC is *ceteris paribus* lower by 0.52 standard deviation (s.d.) for people part of the movement than for those who oppose it, which is comparable to the spread of 0.39 s.d. between extreme-right and extreme-left people (4).

Two socio-demographics are also consistently related to attitudes over CC: age and level of education. In general, the younger and the more educated one is, the more one is concerned by CC. People aged 18-24 may appear to have slightly lower knowledge and lower pessimism than people of prime age *ceteris paribus*, in columns (1,4,5); but this is because their concern are mostly captured by the employment status modality "student", not shown in the table. Overall, the generation with the least concern is undeniably those aged over 65. For instance, without any control, they are 20 percentage points (p.p.) less likely to believe that CC is anthropic than young adults (2) — though most of this effect is explained by a lower level of education (1). Another finding is that men have a higher knowledge than women by 0.15 s.d. *ceteris paribus* (4), but their perception of the severity of CC is virtually the same (5). Finally, other characteristics have smaller or even insignificant effects.

Although the determinants we find are broadly consistent with those elicited in the literature (Upham et al., 2009; Whitmarsh, 2011; ADEME, 2018),[12] we do not encounter the political polarity which characterizes the United States. Indeed, Kahan et al. (2012) argue that American people "tend to form perceptions of societal risks that cohere with values characteristic of groups with which they identify" (this is the cultural cognition thesis), rather than through an assessment of the scientific evidence they encounter (the science comprehension thesis). It is crucial to know whether people neglect climate science in such a way, as this would mean that a media campaign would have little effect on people's assimilation of climate science. Kahan et al. (2012) and McCright & Dunlap (2011) provide evidence for cultural cognition by showing that education has little effect on perceived risk or knowledge of CC, while the interaction between education and political orientation has a significant effect.[13] We assess whether such interaction appears in the French context, by studying the interaction between the higher degree obtained and the left-right political leaning (columns 4, 6). We find no significant interaction, and obtain the same nil result when replacing the traditional left-right scale by the Yellow Vests positioning, and/or the higher degree by knowledge on CC (see online Appendix). This lack of evidence suggests that the public debate over CC is less polarized in France than in the US, and that the knowledge and perception of many French people could change with better access to information over CC.

Figure 24 gives a sense of the shift in the perception and support for climate policies that could follow an information campaign, as it shows the correlations between attitudes over CC, climate policies, and socio-demographics. Knowledge is highly correlated with the perceived gravity of CC (correlation of 0.43), and both of these variables are in turn well correlated with the readiness to adopt an ecological lifestyle and to the number of climate policies (of Figure 21) supported (correlations around 0.3). The acceptance of our Tax & Dividend is less correlated with attitudes (at 0.1-0.2), as the support for this policy is already low. Still, the positive correlation between knowledge and support for other climate policies is an encouraging prospect for an information campaign about CC and even more so since we did not find evidence that partisanship would lead to the dismissal of scientific discourse. Finally, as previously seen, diploma and age are quite correlated with attitudes, though theses correlations are below those between attitudes over CC and over policies, at 0 to 0.2.

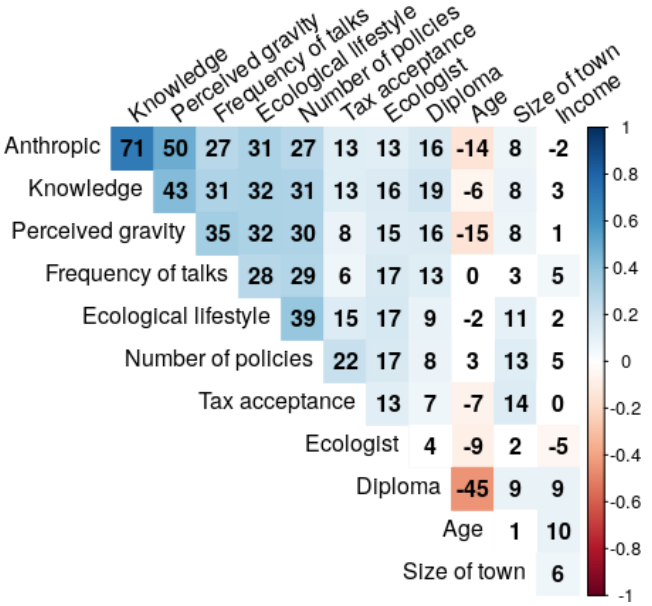


Figure 24: Correlations between attitudes over climate change, climate policies and socio-demographics (in %).

### 6.2. *Attitudes over policies*

To better understand the heterogeneity in people's support, we regress several indicators of attitudes towards climate policies on respondents' characteristics. Table II reports the results for the acceptance of our Tax & Dividend (columns 1-2) and the readiness to adopt an ecological

[12] See also Capstick et al. (2015) for trends in attitudes.

[13] Funk & Kennedy (2016) also report that Republicans are equally distrustful of climate scientists' integrity whatever their level of education, while the distrust vanishes for Democrats with higher degrees. The mechanism of the interaction is documented by Ehret et al. (2018) and Van Boven et al. (2018): people form beliefs through partisan cues, by adopting views expressed by political figures of the party they identify and rejecting positions from the other party.

lifestyle (6) in the case that the richest were contributing, efforts were shared globally, and alternatives were developed. We also use the eight policies proposed in Figure 21 in our dependent variables: column 3 studies the share of policies approved while column 4 features the preference for norms vs. taxes within the policies. Similarly, column 5 uses six measures of Figure 20 to define an index of preference for earmarking vs. transfers. Indexes for these preferences are constructed as follows:

$$\text{Norms vs. taxes} = \sum_{p \in \text{norms}} \text{score}_p - \sum_{p \in \text{taxes}} \text{score}_p \quad (3)$$

where the score of each measure corresponds to a grade between $-2$ (for a "Not at all" answer) and 2 (for "Yes, completely"). We proceed similarly for earmarking vs. transfers, and describe the categorization of measures in Appendix C.2. Again, we normalize these two indexes by subtracting the mean (2.8 for norms vs. taxes, 1.4 for earmarking vs. transfers) and dividing by the standard deviation (3.3 and 3.1 respectively).

As suggested by the correlation matrix of section 6.1, knowledge on CC and the conviction that it would be disastrous positively affect the approval of climate policies, *ceteris paribus*. Excluding the (endogenous) variables describing political orientation, an increase in knowledge by 1 s.d. would induce a lower likelihood to reject Tax & Dividend by 5 p.p. (column 2). The effect of these variables is even stronger when considering the share of policies approved: controlling for socio-demographics, an increase in knowledge by 1 s.d. is associated with an additional approval of 6 p.p. while the conviction that CC is disastrous increases it by 9 p.p. (see online Appendix). Beyond the strong correlation we previously found, these results clearly show that increasing climate awareness would significantly increase the support for climate policies.

Besides attitudes over CC, the two most critical determinants appear to be one's positioning towards ecologists and towards the Yellow Vests. All else equal, ecologists are more likely to accept Tax & Dividend by 13 p.p., and more willing to approve other environmental policies by about 8 p.p. Conversely, holding other variables constant, people supporting the Yellow Vests are 22 p.p. more likely to reject Tax & Dividend relative to those opposed to the movement. As shown in column 3, higher affinity with the Yellow Vests is also associated with less support for other climate policies. Ecologists being more favorable to environmental taxes, their relative preference for norms vs. taxes is lower than for other respondents. Ecologists also display a higher relative preference for earmarking, consistent with a willingness to increase environmental spending in general. Conversely, since Yellow Vests supporters are overall less likely to accept environmental policies including norms, their relative preference for norms against taxes is lower than average. They also have a higher relative preference for transfers vs. earmarking compared to other households, consistently with a lower willingness to pay to protect the environment and/or greater concerns regarding purchasing power. Finally, ecologists' attitudes towards environmental policies translate into a higher willingness to adopt an ecological lifestyle (by 15 p.p.), but the opposite does not hold true for the Yellow Vests, who are not significantly less ready to adopt an ecological lifestyle. Although this could signal some warm glow, it also suggests that their strong rejection of environmental policies does not simply reflects from lower concerns about the environment. The conditions of fairness embedded in our question could be critical if Yellow Vests are to accept sacrifices. Their rejection could also reflect a deeper rejection of policies in general, due to a high distrust in the government — documented in Algan et al. (2019). This interpretation echoes a large literature on the importance of trust for climate policies' support, as reviewed in Drews & van den Bergh (2016).

A clear message from Table II is that the standard left-right spectrum is hardly relevant to understanding attitudes towards environmental policies. None of our five left-right dummy variables are significantly correlated with the share of policies approved. With respect to the Tax & Dividend, the only significant effect is for the extreme-left, with a positive coefficient of 0.11 which partly compensates for the higher share of people supporting the Yellow Vests in this category (63% support or are part), and whose attitude towards the environment might differ from other supporters of the movement. This result somewhat contrasts with literature that has shown evidence of greater support for climate policies from people on the left of the political spectrum (see Drews & van den Bergh, 2016, for a review). Without controlling for other variables, we find that people most likely to accept the Tax & Dividend in France are the ones affiliated with the center (+9 p.p. relative to "Indeterminate"), and the least likely are those on the extreme-right (-15 p.p.), which may be driven by their respective support or rejection of the current government who tried to increase the carbon tax. Our results also show that people on the extreme-left and in the center are the most likely to approve other environmental policies (+7 p.p.), while the least likely are those on the extreme-right ($-6$ p.p.). Still, these differences become small and not statistically significant when covariates are included.

Besides political attitudes, we also observe heterogeneity in people's responses along socio-demographic lines. As in attitudes over CC, age plays a role, as 18-24 are about 10 p.p. more likely to accept the Tax & Dividend (column 2). Still, controlling for knowledge, political attitudes and other variables, this effect is reduced by half. Similarly, more educated people tend to be more open to environmental policies (as previously found by Thalmann, 2004), but this effect becomes insignificant once age dummies are included as covariates. Furthermore, we find little effect of income on attitudes towards climate policies, a result that confirms that of Thalmann (2004) in Switzerland. Using our full set of controls, the most significant variables

Table II: Determinants of attitudes towards climate policies

| | Acceptance of Tax & Dividend | | Share of policies approved | Norms vs. taxes | Earmarking vs. transfers | Ecological lifestyle |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Knowledge on CC | 0.030*** | 0.049*** | 0.043*** | 0.029 | 0.130*** | 0.103*** |
| | (0.009) | (0.009) | (0.005) | (0.020) | (0.020) | (0.009) |
| CC is disastrous | 0.022 | 0.036** | 0.081*** | 0.122*** | 0.157*** | 0.143*** |
| | (0.018) | (0.018) | (0.010) | (0.040) | (0.039) | (0.018) |
| Interest in politics (0 to 2) | −0.019 | | 0.035*** | −0.010 | 0.054* | 0.027** |
| | (0.013) | | (0.007) | (0.029) | (0.028) | (0.013) |
| Ecologist | 0.126*** | | 0.083*** | −0.135** | 0.250*** | 0.150*** |
| | (0.024) | | (0.013) | (0.056) | (0.054) | (0.025) |
| Yellow Vests: PNR | −0.021 | | −0.052*** | 0.007 | −0.111 | −0.080** |
| | (0.032) | | (0.018) | (0.073) | (0.071) | (0.033) |
| Yellow Vests: understands | −0.144*** | | −0.029** | −0.055 | −0.092* | −0.013 |
| | (0.022) | | (0.012) | (0.050) | (0.049) | (0.022) |
| Yellow Vests: supports | −0.222*** | | −0.048*** | −0.130** | −0.142*** | −0.023 |
| | (0.023) | | (0.013) | (0.053) | (0.052) | (0.024) |
| Yellow Vests: is part | −0.213*** | | −0.083*** | −0.249** | −0.173* | −0.036 |
| | (0.043) | | (0.023) | (0.097) | (0.095) | (0.043) |
| Left-right: Extreme-left | 0.112** | | −0.031 | 0.148 | −0.167 | −0.021 |
| | (0.055) | | (0.030) | (0.126) | (0.123) | (0.056) |
| Left-right: Left | 0.090 | | −0.015 | 0.234* | −0.119 | 0.045 |
| | (0.058) | | (0.032) | (0.131) | (0.128) | (0.058) |
| Left-right: Center | 0.017 | | −0.018 | 0.316** | −0.106 | −0.044 |
| | (0.057) | | (0.031) | (0.129) | (0.126) | (0.058) |
| Left-right: Right | −0.002 | | −0.054* | 0.341** | −0.162 | −0.036 |
| | (0.059) | | (0.032) | (0.134) | (0.131) | (0.060) |
| Left-right: Extreme-right | 0.039 | | −0.026 | 0.286** | −0.170 | −0.050 |
| | (0.056) | | (0.031) | (0.127) | (0.123) | (0.056) |
| Diploma (1 to 4) | −0.006 | −0.001 | 0.005 | 0.006 | 0.017 | −0.008 |
| | (0.009) | (0.008) | (0.005) | (0.020) | (0.020) | (0.009) |
| Age: 25 – 34 | −0.047 | −0.099*** | −0.023 | 0.037 | −0.159* | 0.032 |
| | (0.041) | (0.032) | (0.022) | (0.093) | (0.090) | (0.041) |
| Age: 35 – 49 | −0.047 | −0.089*** | −0.017 | 0.188** | −0.003 | 0.038 |
| | (0.040) | (0.030) | (0.022) | (0.092) | (0.089) | (0.041) |
| Age: 50 – 64 | −0.055 | −0.115*** | −0.010 | 0.321*** | −0.060 | 0.049 |
| | (0.044) | (0.031) | (0.024) | (0.100) | (0.097) | (0.044) |
| Age: ≥ 65 | −0.067 | −0.100*** | −0.009 | 0.369*** | −0.058 | 0.007 |
| | (0.052) | (0.032) | (0.028) | (0.118) | (0.115) | (0.052) |
| Income (k€/month) | 0.006 | 0.001 | 0.009** | 0.014 | 0.031* | −0.003 |
| | (0.008) | (0.005) | (0.004) | (0.018) | (0.017) | (0.008) |
| Sex: Male | −0.052*** | −0.074*** | −0.017* | −0.029 | −0.002 | −0.062*** |
| | (0.018) | (0.017) | (0.010) | (0.040) | (0.039) | (0.018) |
| Size of town (1 to 5) | 0.019** | 0.033*** | 0.0002 | 0.009 | −0.003 | −0.003 |
| | (0.008) | (0.007) | (0.004) | (0.018) | (0.017) | (0.008) |
| Frequency of public transit | −0.003 | 0.014** | −0.004 | 0.046*** | 0.020 | 0.024*** |
| | (0.007) | (0.006) | (0.004) | (0.017) | (0.016) | (0.007) |
| Additional covariates | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Observations | 3,002 | 3,002 | 3,002 | 3,002 | 3,002 | 3,002 |
| $R^2$ | 0.150 | 0.051 | 0.226 | 0.081 | 0.121 | 0.202 |

*p<0.1; **p<0.05; ***p<0.01

Note: Standard errors are reported in parentheses. Omitted variables are *Yellow Vests: opposes*, *Age : 18 – 24* and *Left-right: Indeterminate*. Additional covariates are defined in C.1.

differ from the main factors of attitudes over CC: these significant variables are size of town (city dwellers being more favorable to environmental policies, as in Thalmann, 2004), and sex (males being less favorable). Although men have a higher knowledge over CC than women on average, this does not translate into higher pessimism (see section 6.1), and it even coincides with lower support for climate policies. This phenomenon is consistent with the findings of Stern et al. (1993) and Hampel et al. (1996) that women are more attentive to links between the environment and things they value, even if they share the same values and beliefs as men. Difference in perception of CC's impact on oneself could thus explain women's higher support for climate policies, even given a lower factual knowledge.

## 7. Conclusion

Despite a social movement against the carbon tax, French people appear mostly aware and concerned about climate change. Their rejection should therefore not be taken as a low willingness to act for the environment, but rather as a perceived inadequacy between current carbon taxation and the fight for the climate. As shown in our companion paper Douenne & Fabre (2019), people's beliefs about carbon taxation are largely biased, and these biases are well anchored, making it unlikely that carbon taxation be peacefully reintroduced in the short-run.

Thus, our survey suggests the following paths forward for successful reforms. First and foremost, a massive and long-lasting information campaign could be launched to improve knowledge about climate change and climate policies. Indeed, higher knowledge is clearly associated with higher concern for CC and higher support for climate policies. Second, as people mostly favor policies that provide alternatives to fossil fuels, the government could develop such policies as a substitute to a carbon tax: investments, subsidies, and regulations in favor of public transport, cleaner vehicles and thermal insulation, etc. Last but not least, a more cost-effective carbon tax may later complement these policies, as people should get convinced by the objective of carbon neutrality and by the government's commitment towards this goal.

More generally, market imperfections, distributive effects and political acceptability concerns call for a combination of different types of climate policies rather than a single price signal (Stern & Stiglitz, 2017; Stiglitz, 2019). Furthermore, to successfully introduce a carbon tax, it is important to build public trust in politicians (Harring & Jagers, 2013) and to correct the inequities of the tax. Sweden was the first country to introduce a carbon tax, and it is no coincidence if political trust is among the highest (Klenert et al., 2018) and if the 1991 Swedish tax was part of a comprehensive restructuring of the tax system, the popular "reform of the century" (Sterner, 2014). A last takeaway of the Swedish example is that a dialogue with all stakeholders can help building a consensus and finding fair solutions, and may be key to decarbonization.


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# Appendices

## A. Raw data

## B. Sources on GhG emissions

### *B.1. Carbon footprints*

*Plane vs. train.* Given that French electricity mix is decarbonized at 93%[14], the carbon footprint of highspeed train is actually more than 20 times lower than that of an interior flight of the same distance. Hence, we chose Bordeaux - Nice as our case study as the train connection makes a big detour by Paris. Thus, we obtain an emission of 10 kg of $CO_2$ by train as compared to 180 kg by

[14] Cf. RTE - Bilan électrique 2018 (p. 32).

Table III: Sample characteristics: quotas stratas.

| | *Population* | Sample |
|---|---|---|
| **gender** | | |
| 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 |
| *Baccalauréat* | *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* | 0.09 |
| *ARA* | *0.12* | 0.13 |
| *PACA* | *0.09* | 0.09 |

Table IV: Households' characteristics.

| | *Population* | Sample |
|---|---|---|
| **Household composition (mean)** | | |
| Household size | *2.36* | 2.38 |
| Number of adults | *2.03* | 1.93 |
| c.u. | *1.60* | 1.61 |
| **Energy source (share)** | | |
| Gas | *0.42* | 0.36 |
| Fuel | *0.12* | 0.09 |
| **Accomodation size ($m^2$)** | | |
| mean | *97* | 96 |
| p25 | *69* | 66 |
| p50 | *90* | 90 |
| p75 | *120* | 115 |
| **Distance traveled 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* | 7.25 |
| p25 | *6* | 5 |
| p50 | *6.5* | 6 |
| p75 | *7.5* | 7 |

Sources: Matched BdF; except for number of adults (ERFS) and domestic fuel (CEREN).

plane. Our source for train is the French railroad company, SNCF, and is consistent with data aggregated by the official agency ADEME. For the flight, our source is a carbon footprint calculator. Another calculator provides almost the same result, so we preferred this figure rather than a higher figure from a third calculator.

*Nuclear vs. wind.* AR5 from IPCC and Pehl et al. (2017) show that nuclear power plants and wind turbines have similar carbon footprint, at 10 $gCO_2eq/kWh$ (for comparison, it is 500 for gas combined cycle).

*Beef vs. pasta.* Poore & Nemecek (2018) show that median beef carbon footprint is 60 $kgCO_2eq/kg$ (more precisely, 30 $kgCO_2eq$ per 100g of protein and 200g of protein per kg); while the carbon footprint of wheat pasta is 1.3 $kgCO_2eq/kg$ (0.5 $kgCO_2eq$ per 1000 kcal of protein and 2695 kcal per kg). Given that a beef steak weighs 100-125g, its carbon footprint is twenty times that of two servings of pasta of 125g each.

### *B.2. Current and target emissions*

French consumption-based yearly GhG emissions amounted in 2014 to 712 $MtCO_2eq$, i.e. 10.8 $tCO_2eq$ p.c., and are roughly stable in recent years (CGDD, 2019). To stop climate change and stabilize the GhG concentration in the atmosphere, it is required to meet zero net emissions. To meet the Paris agreement, France National Low-Carbon Strategy aims to achieve carbon (i.e. GhG) neutrality by 2050 (CGDD, 2015). Given carbon sinks estimated at 85 $Mt_2eq$ for 2050 (mainly forest and soil), this strategy requires to reach gross emissions of about 1 $tCO_2eq$ p.c. at this date. Admittedly, less stringent scenarios may still allow to keep global warming below +2°C in 2100 with good probability — even considering the same burden share for France — by relying more heavily on net negative emissions after 2070 through carbon capture and storage. For this reason, we consider a range of answers as correct for the French target emission in 2050: from 0 to 2 $tCO_2eq$ p.c.

## C. Details on main regressions

### *C.1. Control variables*

Our regression Tables I and II display only the most relevant variables, but — when specified — the following additional covariates are included as controls:

**Socio-demographics:** *respondent's income; household's income; employment status* (9 categories)*; socio-professional category* (8 categories)*; region of France* (10 categories)*; household size; number of people above 14; number of adults; single; number of c.u.; smokes; favored medium for news* (5 categories).

**Political orientation:** *conservative; liberal; humanist; patriot; apolitical.*

**Energy and exposure to policies:** *heating energy: gaz; heating energy: domestic fuel; accomodation size; annual distance travelled by car; fuel economy; type of fuel: diesel; type of fuel: gasoline; number of vehicles; simulated net gain from Tax & Dividend; opinion on public transports; mode of commuting transport.*

### *C.2. Measures for relative preferences*

We constructed the two indexes of section 6.2 using the following measures:

**Norms:** *insulation standards; pollution standards; roadworthiness standards; prohibition of polluting vehicles.*

**Taxes:** *kerosene; red meat; urban tolls; climate fund.*

**Earmarking:** *renovation; renewables; non polluting transport.*

**Transfers:** *to bottom half; to all; to constrained households.*

## D. Questionnaire

Hereafter, we only describe questions of the survey that are used in the present paper. The other questions are described and analyzed in our companion paper (Douenne & Fabre, 2019).

*Socio-demographics.*

1. What is your postal code?
2. What is your gender (in the sense of civil status)?
   *Female; Male*
3. 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*
4. What is your employment status?
   *Permanent; Temporary contract; Unemployed; Student; Retired; Other active; Inactive*
5. What is your socio-professional category? (Remember that the unemployed are active workers).
   *Farmer; Craftsperson, merchant; Independent; Executive; Intermediate occupation; Employee; Worker; Retired; Other Inactive*
6. 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...); Bac +3 (licence...) [bachelor]; Bac +5 or more (master, engineering or business school, doctorate, medicine, master, DEA, DESS...)*
7. How many people live in your household? Household includes: you, your family members who live with you, and your dependents.
8. 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.
9. What is the net **monthly** income (in euros) **of your household**? **All income** (before withholding tax) is included here: salaries, pensions, allowances, APL [housing allowance], land income, etc.
10. In your household how many people are 14 years old or older (**including yourself**)?
11. In your household, how many people are over the age of majority (**including yourself**)?

*Energy characteristics.*

12. What is the surface area of your home? (in $m^2$)
13. What is the heating system in your home?
    *Individual heating; Collective heating; PNR (Don't know, don't say)*
14. 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)*
15. How many motor vehicles does your household have?
    *None; One; Two or more*
16. [Without a vehicle] How many kilometers have you driven in the last 12 months?
17. [One vehicle] What type of fuel do you use for this vehicle?
    *Electric or hybrid; Diesel; Gasoline; Other*

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

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

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

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

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

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

*Partial reforms [transport / housing].* (...)

24. 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]*

25. 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%*

*Tax & Dividend: initial.*

26. 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.

(...)

27. [ [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)*

28. 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)*

29. 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)*

*Tax & Dividend: after knowledge.* We always consider the same measure. (...)

30. Why do you think this measure is beneficial? (Maximum three responses)
*Contributes to the 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):*

31. 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):*

(...)

*Attitudes over other policies.*

32. In which cases would you be in favor of increasing the carbon tax? I would be in favor if the tax revenues were used to finance...

(a) a payment to the 50% poorest French people (those earning less than 1670€ per month)
(b) a payment to all French people
(c) a compensation for households forced to consume petroleum products
(d) a decrease in social contributions
(e) a decrease in VAT
(f) a decrease in the public deficit
(g) the thermal renovation of buildings
(h) renewable energy (wind, solar, etc.)
(i) clean transport

*Yes, absolutely; Yes, rather; Indifferent or Don't know; No, not really; No, not at all*

33. 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)*

34. Would you support the following environmental policies?

    (a) A tax on kerosene (aviation)
    (b) A tax on red meat
    (c) Stricter standards on the insulation of new buildings
    (d) Stricter standards on the pollution of new vehicles
    (e) Stricter standards on pollution during roadworthiness tests
    (f) The prohibition of polluting vehicles in city centers
    (g) The introduction of urban tolls
    (h) A contribution to a global climate fund

*Yes, absolutely; Yes, rather; Indifferent or Don't know; No, not really; No, not at all*

35. For historical reasons, diesel is taxed less than gasoline. Would you be in favor of raising taxes on diesel to catch up with the level of taxation on gasoline?
*Yes; No; PNR (Don't know, don't say)*

*Attitudes over climate change.*

36. How often do you talk about climate change?
*Several times a month; Several times a year; Almost never; PNR (Don't know, don't say)*

37. In your opinion, climate change...
*is not a reality; is mainly due to natural climate variability; is mainly due to human activity; PNR (Don't know, don't say).*

38. Which of the following elements contribute to global warming? (Several answers possible)
*$CO_2$; Methane; Oxygen; Particulate matter*

39. In your opinion, which of the following statements are true? (Several answers possible).
*Consuming one beef steak emits about 20 times more greenhouse gases than eating two servings of pasta.; Electricity produced by nuclear power emits about 20 times more greenhouse gases than electricity produced by wind turbines.; A seat in a Bordeaux - Nice journey emits about 20 times more greenhouse gases by plane than by high speed train.*

40. In your opinion, how would the effects of climate change be, if humanity did nothing to limit it?
*Insignificant, or even beneficial; Small, because humans would be able to live with it; Grave, because there would be more natural disasters; Disastrous, lifestyles would be largely altered; Cataclysmic, humankind would disappear; PNR(Don't know, don't say)*

41. In which of these two regions do you think will climate change have the worst consequences?
*The European Union; India; As much in both*

42. In your opinion, in France, which generations will be seriously affected by climate change? (Several answers possible)
*People born in the 1960s; People born in the 1990s; People born in the 2020s; People born in the 2050s; None of the four*

43. In your opinion, who is responsible for climate change? (Several possible choices)
*Each of us; The richest; Governments; Some foreign countries; Past generations; Natural causes*

44. Currently, each French person emits on average the equivalent of 10 tons of $CO_2$ per year.

    In your opinion, how much must this figure be reduced to by 2050 in order to hope to contain global warming to +2°C in 2100 (if all countries did the same)? In 2050, we should emit at most...
    *0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10* tons

45. Has climate change had or will it have an influence on your decision to make a child (or children)?
*Yes; No; PNR (Don't know, don't say)*

46. [If *Yes*] Why does climate change influence your decision to have a child (or children)? (Several answers possible).
*Because I don't want my child to live in a devastated world.; Because each additional human being aggravates climate change.*

47. Would you be willing to change your lifestyle to fight climate change? (Several answers possible)
*Yes, if policies went in this direction; Yes, if I had the financial means; Yes, if everyone did the same; No, only the richest people have to change their way of life; No, it is against my personal interest; No, I think climate change is not a real problem; I have already adopted a sustainable way of life; I try, but I have trouble changing my habits*

48. Assuming that all states in the world agree to firmly fight climate change, notably through a transition to renewable energy, by making the richest contribute, and imagining that France would expand the supply of non-polluting transport very widely; would you be willing to adopt an ecological lifestyle (i.e. eat little red meat and ensure to use almost no gasoline, diesel or kerosene)?
*Yes; No; PNR (Don't know, don't say)*

*Shale gas (and smoking).*

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

50. The use of shale gas would limit climate change, as gas would be exported and used to produce electricity instead of coal. On the other hand, extraction would risk reducing water quality at the local level. Your department [would possibly be / would not be] concerned by the exploitation of shale gas.

    In view of this information, would you be in favor of shale gas exploitation in France?
    *Yes; No; PNR (Don't know, don't say)*

51. What would be the main benefit to you from shale gas development?
    *This would limit climate change; This would create jobs and boost the department; None of these two reasons*

52. What do you think of the idea that shale gas would limit climate change?
    *It is valid: any decrease in emissions goes in the right direction; It is unwelcome: emissions should be stopped, not just slowed down; PNR(Don't know, don't say)*

*Access to public transport and mobility habits.*

53. How many minutes walk is it to the nearest public transit stop? (To simplify, you can use the conversion 1 km = 10 min walk).
    *in min:* ; *PNR (Don't know, don't say)*

54. How often does the nearest public transport pass? (excluding school buses)
    *Less than three times a day; Between four times a day and once an hour; Once or twice an hour; More than three times an hour; PNR (Don't know, don't say)*

55. What do you think about the availability of public transport where you live? It is...
    *Satisfactory; Suitable, but should be increased; Limited, but sufficient; Insufficient; PNR (Don't know, don't say)*

56. What mode of transportation do you mainly use for each of the following trips?

    (a) Home - work (or studies)

    (b) Grocery shopping

    (c) Leisure (excluding holidays)

    *Car; Public transport; Walking or cycling; Two-wheeled vehicle; Carpooling; Not concerned*

57. [If *Car* selected for Work] Would it be possible for you, without changing your home or workplace, to travel from home to work using public transport?
    *Yes, it would not be very difficult for me; Yes, but it would bother me; No; PNR (Don't know, don't say)*

58. [If *Car* selected for Work] Would it be possible for you, without changing your home or workplace, to travel from home to work by walking or cycling?
    *Yes, it would not be very difficult for me; Yes, but it would bother me; No; PNR (Don't know, don't say)*

*Politics and media.*

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

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

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

62. 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)*

*Open field.*

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

## E. Who are the Yellow Vests

Table V: 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% |
| Ecologist (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% | 8% | 36% | 21% | 3% |
| 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.