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IS THE REVEALED PRICE OF DEMOCRACY BIASED?¹

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ABSTRACT: We examine how information influences the marginal willingness to pay taxes (MWTPT) through a four-wave randomized survey experiment conducted during the COVID-19 pandemic. Specifically, we assess the impact of quantitative (data on the actual tax-to-GDP ratio) and qualitative (basic pros and cons of taxation) information on revealed MWTPT. The results show that qualitative information increases MWTPT, particularly among high-income individuals. In contrast, quantitative information only reduces MWTPT among high-income individuals who initially underestimated the aggregate tax burden. Hence, those who are potentially more affected by taxes are also more sensitive to the provision of information. These findings suggest that information can shape perceptions of the tax system and, consequently, influence individuals' willingness to contribute to public good provision. This has important implications for tax policy design and efforts to reduce political polarization. If these efforts are not properly implemented, the revealed price of democracy will remain biased.

JEL Codes: D72, D91, H20, H26, H30

Keywords: Survey experiment, Fiscal knowledge, Marginal Willingness to Pay Taxes, Income based behaviour

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1. Introduction

"Taxes are what we pay for a civilized society". This famous statement is attributed to the United States Supreme Court Justice Oliver Wendell Holmes, Jr., in 1927. While democratic societies accept this notion¹, there is significant divergence regarding the desired level of taxation, and consequently, about the scale of the public sector². Societies are diverse, and in the end, under standard assumptions, the expected political equilibrium (i.e., level of taxes) in democratic policymaking would be determined by the 'median voter' (Downs, 1957). From a normative point of view, however, this does not necessarily imply that the rational voter will get what he truly wants, since the incentive to collect information is limited (Congleton, 2004). As voter ignorance increases, median voter outcomes lead to more policy mistakes, and the accuracy of decisions based on majority rule declines (Congleton, 2007). Thus, political ignorance has crucial consequences for the quality of democratic representation, which might even call into question the effectiveness of the entire democratic process (Fowler and Margolis, 2014). Nonetheless, simple and impartial information campaigns – as the experiment used in this paper, which we will explain later – can have significant effects by correcting misconceptions about democracy and media freedom (Acemoglu *et al.*, 2025).

Precisely because absorbing and understanding information is costly, individuals may be more selective in choosing the sources of information, a trend that has been amplified by the digital revolution. Who is informed and about what are largely determined by the individual demand for information, whereas before, the supply of information by the media was more important (Matějka and Tabellini, 2021). In the end, information selectivity could lead to political polarization (Bowen, Dmitriev and Galperti, 2023). Biased aggregated information would then not only cause an inefficient equilibrium – i.e., one that does not reflect the true preferences of the 'median voter' – but, due to the resulting polarization, it could also make it more difficult to reach a consensus in multiparty systems, resulting in gridlocked governments (see the recent review by Marino, Iacono and Mollerstrom, 2024). Taxation is no exception (Stantcheva, 2021), as Alesina, Miano and Stantcheva (2020) referred to the partisan views of individuals in the U.S. as a "polarization of reality", meaning different perceptions of realities that can even be factually checked. Certainly, there are significant gaps in how individuals perceive the tax system, and these gaps are not only due to a lack of information but also to misinformation, partly exacerbated by the wide array of information channels available today. Do these gaps affect individuals'

¹ To be more precise, as Acemoglu, Naidu, Restrepo and Robinson (2015) empirically show, "democracy does lead to more taxes" (p. 1927).

² Numa (2024) offers an interesting novel perspective of fiscal illusion though an experiment with a personalised fiscal calculator at the individual level. The findings suggest that providing personalised fiscal information reduces support for higher taxes and spending while increasing support for lower taxes and spending.

revealed preferences regarding taxation, and can this situation be reversed through the provision of neutral, fact-based information? This is the focus of the paper and the empirical question we aim to address.

In particular, by means of a unique survey dataset for Spain, we infer the individual marginal willingness to pay taxes (MWTPT). While we show that differences in political ideology or in the education level can significantly influence MWTPT, our focus is whether these revealed preferences are biased because of misinformation about taxation. To answer this question, we perform an experiment in the survey. A randomly selected group of respondents receives *quantitative* information on Spain's and other countries' aggregate tax burden across different years, along with *qualitative* information about the fundamental trade-offs associated with taxes. The provided information is simple and neutrally framed to maximize understanding among respondents. A control group receives no information. The results show that information has a positive and significant effect on the revealed MWTPT. When we disentangle the effects, we find that quantitative information does not have a general impact on MWTPT, whereas qualitative information has a positive effect. The price of democracy is downward-biased and qualitative information appears to counteract this bias.

A heterogeneity analysis indicates that high-income individuals are particularly sensitive to information. Quantitative information reduces MWTPT only among high-income individuals who initially underestimate the aggregate tax burden, that is, they lower their MWTPT when they realise that contribute significantly to redistribution relative to a reference-point (Charité, Fisman, Kuziemko and Zhang, 2022), the perceived tax-to-GDP ratio. Consequently, direct information about taxes can shape perceptions of the tax system and, thus, influence the price that individuals are willing to pay for democracy. However, when the information provided relates to other important economic issues (public debt, the underground economy and fiscal decentralization), there are no spillover effects on the revealed MWTPT. This reinforces the results obtained through our empirical strategy using the experiment directly related to taxation.

The rest of the paper is organized as follows: Section 2 describes the survey data and the experiment, Section 3 presents the empirical framework, Section 4 outlines the results, and Section 5 concludes.

2. Survey Data and the Experiment

2.1. Survey Data and Questions

We conducted four waves of a survey aimed, first, at identifying the extent to which citizens have the right information about basic features of the public sector, such as the tax-to-GDP ratio or the public debt-to-GDP ratio. Second, we aimed at inferring their marginal willingness to pay taxes (MWTPT). Table 1 shows the basic characteristics of each wave. In total, we have slightly more than 8,400 observations.

The first wave was conducted in May 2020 during the lockdown imposed by the Spanish government due to Covid-19, which ran from 13 March till 25 June 2020. Since then, the three subsequent surveys were conducted every six months. The pandemic itself, along with the public policy responses, raised public interest in the role of the public sector in the economy, including concerns about potential future tax hikes to compensate for increasing public social expenditures (see, for example, Figure 1). It is within this context that each wave of the survey was conducted.

Table	1:	Survey	Waves
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Wave	Date	Number of responses	Average time of response
1 st	20-26 May, 2020	2,003	11 minutes 5 seconds
2 nd	20-25 November, 2020	2,024	10 minutes 46 seconds
3 rd	26 May to 7 June, 2021	2,001	10 minutes 16 seconds
4 th	3-9 December, 2021	2,409	11 minutes 36 seconds

Figure 1: Intensity of Google Searches for the word "taxes" and Covid-19 in Spain.



<u>Note</u>: Left axis: Google trend, from 0 minimum search intensity to 100 maximum search intensity. Right axis: Covid-19 cases per capita cumulated last 14 days

The survey was on-line and monitored and processed by a professional survey firm *Netquest*, which has a high-quality broad panel of potential respondents³. Participation was only by

³ https://www.netquest.com/en/online-surveys-investigation

invitation and those taking part in one wave were excluded from the rest. During the survey, there was a question about the sincerity in responding and a random quality check question to secure respondents' attention (see Appendix 1). Moreover, any responses where the time of response was 20% faster than expected have been dropped from the sample. Respondents were over the age of 18, resided in Spain, and were rewarded through a program of in-kind compensation. The final sample is largely representative of the Spanish population across many dimensions (see Table 2)⁴.

Variables	Description	Survey	Spain population	Difference
Woman	Dummy equal to 1 if the respondent is a female	0.4995	0.50435	-0,0048
18-24 years old	Dummy equal to 1 if the respondent is between 18 and 24 years old	0.1188	0.0949	+0.0239
25-34 years old	Dummy equal to 1 if the respondent is between 25 and 34 years old	0.1526	0.1530	-0.0004
35-44 years old	Dummy equal to 1 if the respondent is between 35 and 44 years old	0.2200	0.2092	+0.0108
45-54 years old	Dummy equal to 1 if the respondent is between 45 and 54 years old	0.2055	0.2169	-0.0114
55-65 years old	Dummy equal to 1 if the respondent is between 55 and 65 years old	0.1712	0.1807	-0.0095
Over 65 years old	Dummy equal to 1 if the respondent is over 65 years old	0.1319	0.14536	-0.0134
1 st quantile income distribution	Dummy equal to 1 if the actual expected monthly household income is less than or equal to 900€	0.0653	0.0655	-0.0002
2nd quantile income distribution	Dummy equal to 1 if the actual expected monthly household income is between 901€ and 1,200€	0.0937	0.1275	-0.0338
3rd quantile income distribution	Dummy equal to 1 if the actual expected monthly household income is between 1,201€ and 1,800€	0.1755	0.1775	-0.0020
4th quantile income distribution	Dummy equal to 1 if the actual expected monthly household income is between 1,801€ and 2,400€	0.2002	0.2385	-0.0383
Top quantile income distribution	Dummy equal to 1 if the actual expected monthly household income is more than 2,400€	0.4654	0.3910	+0.0744
Student/housewives/other	Dummy equal to 1 if the current employment status of the respondent is student, housewives or other	0.1309	0.0820	+0.0489
Worker in <i>ERTE</i>	Dummy equal to 1 if the current employment status of the respondent is worker in <i>ERTE</i> , temporary employment regulation which enables companies to make suspensions of employment contracts or reduce their working hours due to force majeure (as Covid-19 lockdown)	0.0216	0.0292	-0.0076

Table 2: Description of Personal Variables and Comparison with the Overall Spain Population

⁴ Statistical Source: for demographic variables *Encuesta de Población Activa*, for labour variables *BBDD* estadísticas TGSS, for education variables *Eurostat*, for political variables *Spanish Center of Sociological Research*, for housing variables *Encuesta Continua de Hogares*, for civil status variables *Instituto Nacional de Estadística*.

⁵ Population between 18 and 75 years old.

⁶ Population between 65 and 75 years old.

	Dummy equal to 1 if the current	0.1926	0.0049	0.0979
Unemployed	unemployed	0.1820	0.0948	0.08/8
_	Dummy equal to 1 if the current			
Retired	employment status of the respondent is	0.1665	0.2293	-0.0628
	Dummy equal to 1 if the current			
Self-employed	employment status of the respondent is	0.0513	0.0906	-0.0393
som omproyee	self-employed	010010	010900	0.0270
	Dummy equal to 1 if the current			
Employed	employment status of the respondent is	0.4471	0.4741	-0.0270
	public employee or private employee			
High education	Dummy equal to 1 if the respondent has an undergraduate degree or a master or a PhD	0.4159	0.360	+0.0559
	Dummy equal to 1 if the political ideology			
Right-wing	of the respondent is between 7 and 10, in a	0.1746	0.249	-0.0744
	1-10 range			
	Dummy equal to 1 if the political ideology			
Left	of the respondent is between 1 and 4, in a	0.4412	0.395	+0.0462
	1-10 range			
Hidden political ideology	not inform about her political ideology	0.1321	0.111	+0.0211
Cantus	Dummy equal to 1 if the political ideology	0.2521	0.246	+0.00(1
Centre	of the respondent is 5 or 6, in a 1-10 range	0.2321	0.246	+0.0061
Live in a rental house	Dummy equal to 1 if the respondent lives in a rental house	0.2387	0.1730	+0.0657
With dependent children	Dummy equal to 1 if the respondent has at least one child	0.5154	0.4928	+0.0226
Single	Dummy equal to 1 if the marriage status of	0.2500	0.2402	⊥0.0016
Single	the respondent is single	0.3309	0.3493	+0.0010
Married or living as a	Dummy equal to 1 if the marriage status of			
couple	the respondent is married or living as a	0.5243	0.5107	+0.0136
	couple			
Separated/divorced	Dummy equal to 1 if the marriage status of the respondent is separated or divorced	0.0995	0.0728	+0.0267
	Dummy equal to 1 if the marriage status of			
Widower	the respondent is widower	0.0254	0.0673	-0.0419

To assess the knowledge of the surveyed people regarding the aggregate level of taxes in the economy, we asked the following question: *The tax-burden indicates the importance of taxes and social security contributions in each economy (as a share of GDP). What do you think the tax-to-GDP ratio is in Spain?* As it is quite unrealistic to assume people know the exact data point, we provided several response options by ranges: below 25%, between 25-35%, between 36-45% (the correct threshold for all waves of the survey), between 46-55%, and above 55%. According to Eurostat data⁷, this ratio was 37.7% in 2020, and 39.0% in 2021. Until 2017, the ratio was at the upper bound of the 25-35% threshold; since then, it has always been above 35%. In any case, it has never been below 25%, or above 40%. Therefore, the correct range (36-45%) seems broad enough that responses outside of this range can clearly be deemed incorrect. As shown in Figure 2, only 32.88% responses are correct, 36.22% undervalue the correct ratio, and the rest overvalue it. Hence, there is considerable dispersion.

7

https://ec.europa.eu/eurostat/databrowser/view/GOV_10A_TAXAG/default/table?lang=en&category=go v.gov_gfs10.gov_10a

To infer the individual marginal willingness to pay taxes, we posed the following question: Some people believe that public services and social benefits should be improved, even if this means higher taxes (group 1). Others believe it is more important to pay lower taxes, even if this results in a lower level of public services and social benefits (group 2). Still others think that the current level of taxes and public services and social benefits is adequate (group 3). Which group is closer to your preferences? We coded responses as follows: MWTPT = -1 (for those self-selected into group 2), 0 (for group 3), and for those self-selected into group 1, there was an additional question that allowed us to code MWTPT as +1 (willing to pay up to an additional 5% of their annual income), +2 (between 6% and 10% of their annual income), and +3 (more than 10% of their annual income). Thus, MWTPT is a discrete variable ranging from a negative predisposition to pay taxes (-1) to a maximum value (+3).



Figure 2: Distribution of Correct Responses for the Tax-to-GDP ratio

In Figure 3, we compare the MWTPT across four individual characteristics that we will systematically consider in our empirical analysis: political leaning, education, gender, and income. We observe the greatest differences between right-wing and left-wing individuals. For each right-wing (left-wing) individual who prefers higher (lower) taxes, there are 2.9 (2.2) left-wing (right-wing) individuals. There are no substantial differences depending on education level and gender. Differences in income levels also do not seem to cause differences in MWTPT: for each high-income (low-income) respondent who prefers lower (higher) taxes, there are 1.1 (1) poorer (richer) individuals. However, our primary interest lies in whether these revealed preferences are biased due to misinformation about the actual level of aggregate taxation. This is why we conducted the experiment we explain next.

2.2. The Experiment

In addition to the questions about the actual tax-to-GDP ratio and the MWTPT, we conducted an experiment with different treatments providing quantitative and qualitative information about relevant topics regarding the public sector. One of these experiments – the one directly relevant to our empirical purposes – focused on the aggregate financial importance of taxation in the economy (i.e., Slide #1: providing *quantitative information*) and also presented a basic trade-off regarding the pros and cons of increasing the level of taxation (i.e., Slide #2: providing *qualitative information*). The nature of the experiment was solely informational.



Figure 3: Distribution of MWTPT Across Key Individual Characteristics

In accordance with these two types of information, we first presented a table with data on the aggregate tax burden in Spain, the U.S., Denmark, and Italy for seven selected years from 2001 to 2020 (see Picture I in Appendix 2, which corresponds with Slide #1). We chose one country with a clearly higher tax burden (Denmark), another with a clearly lower one (the U.S.), and another Latin country more comparable to Spain (Italy), whose tax burden is also higher. Therefore, there was no particular bias in the benchmarks provided.

Secondly, we presented two statements about taxes, reflecting the classical trade-off between objectives (see Picture II in Appendix 2, which corresponds to Slide #2):

- 'High levels of tax burden can lead to undesirable effects on the economy, such as disincentives to undertake, invest, or even work';

- 'However, the higher the tax burden, the more the public sector can provide, with greater guarantees, among other things, services related to the Welfare State'; and
- A summary conclusion: 'As we have seen in the data table, various developed countries have different levels of tax burden'.

Hence, again, we aimed to remain as neutral as possible. Additionally, through simple and clear slides, we sought to minimize the cognitive effort required to process the information, thereby enhancing the effectiveness of our communication with the surveyed individuals (Haaland, Roth and Wohlfart, 2023).

	Treated Group		Contro		
	Mean	SD	Mean	SD	Difference
Undervaluation	0.362	0.481	0.352	0.009	0.009
Overvaluation	0.302	0.459	0.312	-0.010	-0.010
Woman	0.500	0.500	0.501	-0.002	-0.002
18-24 years old	0.121	0.326	0.118	0.003	0.003
25-34 years old	0.153	0.360	0.153	0.000	0.000
35-44 years old	0.220	0.414	0.223	-0.003	-0.003
45-54 years old	0.205	0.404	0.204	0.001	0.001
55-65 years old	0.170	0.376	0.170	0.000	0.000
Over65	0.131	0.338	0.132	-0.001	-0.001
Low income	0.232	0.422	0.226	0.006	0.006
Median income	0.543	0.498	0.563	-0.020	-0.020
High income	0.108	0.311	0.123	-0.015	-0.015
Hidden Income	0.117	0.321	0.088	0.029	0.029
Student/housewives/other	0.132	0.339	0.128	0.005	0.005
Worker in ERTE	0.027	0.161	0.029	-0.002	-0.002
Unemployed	0.204	0.403	0.203	0.002	0.002
Retired	0.171	0.377	0.153	0.018	0.018
Self-employed	0.053	0.224	0.050	0.002	0.002
Employed	0.413	0.492	0.437	-0.024	-0.024
High education	0.438	0.496	0.412	0.025	0.025
Left	0.445	0.497	0.445	0.000	0.000
Hidden political ideology	0.135	0.342	0.130	0.005	0.005
Centre	0.254	0.436	0.254	0.000	0.000
Live in a rental house	0.237	0.425	0.242	-0.005	-0.005
With dependent children	0.516	0.500	0.513	0.003	0.003
Single	0.361	0.480	0.357	0.004	0.004
Married or living as a	0.511	0.500	0.524	-0.012	-0.012
couple					
Separated/divorced	0.102	0.303	0.095	0.007	0.007
Widower	0.025	0.158	0.024	0.001	0.001
Number of observations	1,6	504	1,0	509	

Table 3: Summary Statistics for Treated and Control Group Characteristics

A treated group of 1,604 randomly selected respondents received the above information and, immediately after, they were asked the MWTPT question. We also conducted other experiments with different groups of surveyed people. These other groups received information on different

issues also related to the public sector: public debt, the underground economy (as a proxy for tax fraud), and fiscal decentralization. Similarly, in each of these three experiments, we first presented a data table for Spain and other countries, followed by two different statements with pros and cons, and a summary conclusion. We will use these additional treatments as robustness tests, as explained later. A control group of 1,609 respondents did not receive any additional information during the survey. Therefore, the total sample (treated plus control groups), shown in Table 3, does not sum to the total for the four waves (see Table 1), as we do not consider individuals treated under other experiments unrelated to the one underpinning our empirical analysis.

We aim to test the impact of the treatment on the MWTPT. The provision of *quantitative information* should only affect those who were initially misinformed about the actual aggregate tax burden in the economy, while the effect of providing *qualitative information* should be independent of any biased perceptions about the actual level of taxes in the economy. Next, we explain the empirical framework we propose to estimate these impacts. Overall, our framework should allow us to estimate the extent to which misinformation – and its source – impacts the revealed MWTPT. If this is the case, we should conclude that the price of democracy (i.e., the revealed MWTPT) is biased.

3. Empirical Framework

We estimate the following model:

$$MWTPT_{ipt} = \alpha + \beta_0 Treated_{ipt} + \mu X_{ipt} + \pi_p + \tau_t + \varepsilon_{ipt}$$
(1)

In equation (1), *i* is the individual indicator, *p* is the provincial indicator, and *t* is the time (wave) indicator. The endogenous variable, the Marginal Willingness to Pay Taxes (*MWTPT*), ranges from -1 (indicating a preference for lower taxes) to +3 (indicating a preference for higher taxes). *Treated* is a dummy variable equal to 1 for respondents who, as explained in Section 2.2, received quantitative information about the actual aggregate tax burden (i.e., the tax-to-GDP-ratio in Spain, as well as in other selected countries) and basic qualitative information regarding the impact of taxes on the economy (i.e., pros and cons).

 X_{ipt} is a vector that includes a range of personal variables⁸, including political leaning (*Left*, *Centre* and *Hidden Political Ideology*, with Right as the base category), *High Education, Woman*, and the level of household income. Regarding this latter variable, we define *Low Income* as 1 for respondents with a monthly household income of less than 900 euros, *Median Income* for those

⁸ The description of all personal variables is reported in Table 2.

with an income between 901 and 3,000 euros, and *High Income* for individuals whose monthly income exceeds 3,000 euros.

We control for unobservable personal characteristics using provincial fixed effects (π_p) and wave fixed effects (τ_t). The error term ε_{ipt} is clustered at the provincial level. Since assignment to the treated group is random, a significant estimate for *Treated* must be interpreted as the causal impact of the experiment on the MWTPT. As explained in Section 2.2., the information provided in the experiment is a combination of quantitative information (Slide #1) and qualitative information (Slide #2). Therefore, in equation (1), the estimate β_0 captures both sources of information, although for some respondents - those who correctly reported the actual tax-to-GDP ratio – the quantitative information should be irrelevant.

To disentangle the impact of each source of information on the MWTPT, we estimate the following model:

$$MWTPT_{ipt} = \alpha + \beta_0 Treated_{ipt} + \beta_1 Treated_{ipt} * Undervaluation_{ipt} + \beta_2 Treated_{ipt} * \\ * Overvaluation_{ipt} + \mu Z_{ipt} + \pi_p + \tau_t + \varepsilon_{ipt}$$
(2)

That is, in equation (2), we add an interaction between treatment and the Undervaluation and Overvaluation dummies. The Undervaluation dummy equals one if the individual undervalues the tax-to-GDP-ratio, meaning that the response is "below 25%" or "between 25-35%", while the correct answer is "between 36-45%". The Overvaluation dummy equals one if the individual overvalues the tax-to-GDP-ratio, meaning that the response is "between 46-55%", or "above 55%". Z_{ipt} includes the same control variables as in equation (1), along with the Undervaluation and Overvaluation variables. The parameter β_1 identifies how treatment affects respondents who underestimate the actual value of the tax-to-GDP ratio, while β_2 identifies how treatment affects respondents at the ratio. The standard errors are robust and clustered at the provincial level. Again, we also include time and province fixed effects.

By controlling for any bias in responses regarding the correct interval of the tax-to-GDP ratio (*i.e.*, *Undervaluation* and *Overvaluation*) and their corresponding interactions, we can interpret the estimate β_0 as the impact of the experiment through the provision of qualitative information. This is because it estimates the impact of information on those treated who knew the correct interval of the ratio, compared to those who were not treated but also knew the correct interval. Certainly, Slide #1 still provides quantitative information about other countries' ratios, and these benchmarks could be relevant even for those who possess correct information about the actual ratio in Spain. Therefore, although the actual information for Spain is shown in the first row of

the table and the data from other countries are above and below the Spain's ratio (i.e., the nature of the benchmarks is neutral), we acknowledge the disentangling of the impact of both types of information may not be perfect. Additionally, since the *Treated* variable interacts with *Undervaluation* and *Overvaluation*, the estimate β_1 captures the impact of providing correct quantitative information to those who undervalue the Tax-to-GDP ratio, while β_2 captures it for those who overvalue it, both relative to those who correctly assessed the Tax-to-GDP ratio. We cannot establish causality from the estimates of *Overvaluation* and *Undervaluation* due to potential endogeneity issues. Therefore, in our empirical strategy, we focus solely on the interaction between the treatment and each of these variables. According to Bun and Harrison (2019), the estimate of the interaction is consistent, allowing us to infer the marginal effect of quantitative information.

In the next section, we present the results of our empirical analysis.

4. Empirical results

4.1. Main results

We estimate the impact of the treatment effect on MWTPT (equation (1)) in Column (1) of Table 4. Columns from 2 to 4 include the treatment interaction with *Undervaluation* and *Overvaluation* (equation (2)). In Column (2) of Table 4, we include all control variables, while in Column (3) we add time and provincial fixed effects. Finally, in Column (4) we change the estimation method from Ordered Logistic Regression (OLR) to Ordinary Least Squares (OLS). Since the OLS estimation method could have potential limitations when the dependent variable is a categorical variable (Long, 1997), our preferred estimates are those obtained using the OLR method with time and provincial fixed effects, i.e., Column (3) of Table 4.

In Column (1), the treated variable is statistically significant with a coefficient of +0.225. This suggests that the combination of quantitative and qualitative information about the actual tax-to-GDP ratio provided by the treatment has a positive and significant effect on the MWTPT. Using the OLR estimate from Column (1), we can determine that the probability of a respondent expressing a positive willingness to pay increases by 0.047 if he received the treatment. We also observe that left-wing and highly educated respondents revealed a higher MWTPT. Therefore, while the provision of information has a general positive impact on the MWTPT, the question remains: do both types of information (qualitative and quantitative) influence the revealed MWTTP? To answer this question, we next estimate equation (2).

Columns (2) to (4) of Table 4 show that the interaction terms between *Treated* and *Undervaluation* and *Overvaluation* are not significant, indicating that the provision of quantitative

information about the real tax-to-GDP ratio in Spain does not significantly alter the impact of the treatment on the revealed MWTPT. This result holds regardless of the bias (whether undervaluation or overvaluation), the specific empirical specification, and the estimation method. Therefore, we conclude that, for the average respondent, the impact of quantitative information does not significantly influence MWTPT. Next, we will test whether this lack of impact holds across all groups of individuals. On the other hand, the estimate of *Treated* is positive and statistically significant. Hence, it is the provision of qualitative information that impacts the willingness to pay taxes. The positive sign indicates that the implicit trade-off presented in Slide #2 of the experiment is resolved in favour of a larger 'Welfare State', as explicitly mentioned on the slide, despite the negative economic impacts also noted therein. The price of democracy is downward-biased, and the provision of basic qualitative information appears to reverse it.

(1)	(2)	(3)	(4)
MWTPT	MWTPT	MWTPT	MWTPT
OLR	OLR	OLR	OLS
0.225***	0.232**	0.233**	0.110**
(0.067)	(0.096)	(0.103)	(0.051)
	-0.083	-0.079	-0.033
	(0.120)	(0.122)	(0.061)
	0.079	0.045	0.041
	(0.127)	(0.131)	(0.066)
	0.423***	0.422***	0.190***
	(0.096)	(0.098)	(0.048)
	-0.157*	-0.107	-0.074
	(0.093)	(0.097)	(0.050)
1.858***	1.721***	1.785***	0.855***
(0.110)	(0.111)	(0.106)	(0.044)
0.242***	0.246***	0.242***	0.119***
(0.053)	(0.051)	(0.052)	(0.026)
0.018	0.050	0.050	0.004
(0.097)	(0.094)	(0.095)	(0.049)
0.114	0.136	0.087	0.039
(0.134)	(0.128)	(0.132)	(0.059)
0.096	0.098	0.074	0.031
(0.114)	(0.115)	(0.117)	(0.055)
0.212	0.182	0.171	0.091
(0.146)	(0.132)	(0.144)	(0.067)
0.597***	0.521***	0.559***	0.250***
(0.076)	(0.069)	(0.074)	(0.033)
0.862***	0.792***	0.836***	0.403***
(0.138)	(0.127)	(0.140)	(0.067)
-0.443**	-0.319*	-0.434**	-0.217**
(0.194)	(0.193)	(0.201)	(0.100)
-0.255	-0.249	-0.264*	-0.108
	(1) MWTPT OLR 0.225*** (0.067) 1.858*** (0.067) 1.858*** (0.110) 0.242*** (0.053) 0.018 (0.097) 0.114 (0.134) 0.096 (0.114) 0.212 (0.146) 0.597*** (0.076) 0.862*** (0.138) -0.443** (0.194) -0.255	$\begin{array}{ccccccc} (1) & (2) \\ \text{MWTPT} & \text{MWTPT} \\ \text{OLR} & \text{OLR} \\ \end{array} \\ \begin{array}{c} 0.225^{***} & 0.232^{**} \\ (0.067) & (0.096) \\ & -0.083 \\ (0.120) \\ & 0.079 \\ (0.127) \\ & 0.423^{***} \\ (0.096) \\ & -0.157^* \\ (0.093) \\ 1.858^{***} & 1.721^{***} \\ (0.110) & (0.111) \\ 0.242^{***} & 0.246^{***} \\ (0.053) & (0.051) \\ 0.018 & 0.050 \\ (0.097) & (0.094) \\ 0.114 & 0.136 \\ (0.134) & (0.128) \\ 0.096 & 0.098 \\ (0.114) & (0.115) \\ 0.212 & 0.182 \\ (0.146) & (0.132) \\ 0.597^{***} & 0.521^{***} \\ (0.076) & (0.069) \\ 0.862^{***} & 0.792^{***} \\ (0.138) & (0.127) \\ -0.443^{**} & -0.319^{*} \\ (0.194) & (0.193) \\ -0.255 & -0.249 \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Table 4: Impact of the Treatment on MWTPT

	(0.165)	(0.157)	(0.160)	(0.077)
Retired	-0.279	-0.251	-0.284	-0.118
	(0.184)	(0.183)	(0.188)	(0.081)
Self-employed	-0.680***	-0.654***	-0.670***	-0.293***
	(0.201)	(0.190)	(0.196)	(0.093)
Employed	-0.252*	-0.254*	-0.270*	-0.115
	(0.148)	(0.152)	(0.144)	(0.071)
25-34 years old	-0.004	0.038	0.020	0.014
	(0.114)	(0.111)	(0.114)	(0.050)
35-44 years old	0.155	0.204*	0.183	0.085
	(0.117)	(0.106)	(0.112)	(0.059)
45-54 years old	0.528***	0.597***	0.568***	0.250***
	(0.132)	(0.133)	(0.135)	(0.063)
55-65 years old	0.736***	0.754***	0.746***	0.320***
	(0.145)	(0.140)	(0.141)	(0.063)
Over 65	0.612***	0.588***	0.614***	0.246***
	(0.205)	(0.200)	(0.220)	(0.090)
Married or living as a couple	-0.057	-0.043	-0.053	-0.027
	(0.099)	(0.090)	(0.094)	(0.041)
Separated/divorced	-0.154	-0.136	-0.126	-0.030
	(0.135)	(0.128)	(0.131)	(0.060)
Widower	-0.053	-0.077	-0.069	-0.023
	(0.171)	(0.172)	(0.172)	(0.082)
Live in a rental house	0.141	0.138	0.159	0.066
	(0.108)	(0.104)	(0.112)	(0.052)
With children	-0.053	-0.077	-0.061	-0.029
	(0.094)	(0.087)	(0.092)	(0.043)
Constant				-0.474***
				(0.090)
Observations	3,213	3,213	3,213	3,213
R-squared				0.18
Provincial FE	YES	NO	YES	YES
Wave FE	YES	NO	YES	YES

 $OLR = Ordered \ Logistic \ Regression \ estimates, \ OLS = Ordinary \ Least \ Squares \ estimates. \ Robust \ standard \ errors \ in \ parentheses, \ clustered \ at \ provincial \ level. \ Over \ and \ undervaluation \ means \ over \ and \ undervaluation \ of \ the \ tax \ burden \ (tax-to-GDP \ ratio. \ *** \ p<0.01, \ ** \ p<0.05, \ * \ p<0.01$

Table 5 presents an analysis of income level heterogeneity regarding the differentiated effect of the treatment on MWTPT based on the respondents' knowledge. Distinguishing between income groups might be relevant, as high-income individuals are very likely more aware about taxes as the redistributive objective is very present in the tax system. The table reports results from an OLR with time and provincial fixed effects, with three separate sub-samples corresponding to low, median, and high-income groups.⁹ Overestimating the actual tax-to-GDP ratio does not have a significant differential impact across all income groups. However, the interaction between *Treated* and *Undervaluation* is negative and significant (-0.728) only for the high-income group

⁹ Recall that we define *Low Income* as 1 if the respondents have a monthly household income of less than 900 euros, *Median Income* as between 901 and 3,000 euros, and *High Income* as greater than 3,000 euros.

(Column 3, Table 5). Within that group, the probability that a respondent expresses a negative willingness to pay increases by 0.130 if he received the treatment, compared to a respondent who knows the actual level of tax burden. Thus, high-income individuals who underestimate tax burden may reduce their MWTPT after the provision of quantitative information, and the estimated impact is not negligible. For the median- and low-income groups, these interactions are not statistically significant. Column 3 also shows a positive and statistically significant coefficient (0.498) for the treated variable, significant at the 5% level, without any interaction. The probability that a respondent with accurate knowledge of the tax burden expresses a positive willingness to pay increases by 0.090 if he received the treatment, showing a positive trend across income groups. Specifically, for the high-income group, the provision of qualitative information significantly increases their MWTPT, even when they have "perfect information" about the actual aggregate tax burden.

Overall, it seems that high-income individuals are particularly sensitive to the provision of both sources of information. They are key players, as they are expected to contribute the most in terms of taxes, and they are also the most sensitive to the provision of information. Regarding quantitative information, they are the only group for which it is relevant, which could be linked to the implicit redistribution role of taxes and reference-dependent preferences (Charité, Fisman, Kuziemko and Zhang, 2022). Since these individuals have incomes well above the median, higher taxes imply redistribution. When they realize they are redistributing more than they perceive is fair (i.e., relative to their reference point, the perceived tax-to-GDP ratio), the resulting utility loss is substantial enough to significantly decrease their MWTPT. In contrast, in the absence of any error with respect to the reference point, this group is particularly responsive to qualitative information. Following the argument that they are key players, the provision of neutral qualitative information seems to foster redistribution through a higher revealed predisposition to pay taxes by this group.

Table 6 presents a heterogeneity analysis considering highly educated respondents, women, and political ideology. We test if the interaction between *Treated* and *Undervaluation/Overvaluation* is significant in other sub-samples: Column (1) presents respondents with a university degree, Column (2) focuses on women, Column (3) on left-wing respondents, Column (4) on those who identify as centrist, and Column (5) on right-wing respondents. In all regressions, we include all socio-economic controls and fixed effects. The estimates of the interactions are not statistically significant in any of these sub-samples. Only high-income respondents appear to be more sensitive to quantitative information. The provision of qualitative information does not affect revealed preferences within the same ideological group. Thus, their preferences appear to be immune to 'neutral' economic information, reinforcing the extent of political polarization noted in the Introduction.

	(1)	(2)	(3)
	MWTPT	MWTPT	MWTPT
	Low income	Median income	High income
Treated	0.033	0.248*	0.498**
	(0.387)	(0.139)	(0.229)
Treated x Undervaluation	0.343	-0.168	-0.728**
	(0.504)	(0.200)	(0.324)
Treated x Overvaluation	0.238	0.128	0.319
	(0.500)	(0.181)	(0.423)
Undervaluation	0.043	0.511***	1.209***
	(0.328)	(0.141)	(0.259)
Overvaluation	-0.248	-0.115	-0.165
	(0.296)	(0.147)	(0.490)
Left-wing	1.737***	1.785***	2.033***
	(0.231)	(0.103)	(0.296)
University degree	0.369*	0.288***	-0.297
	(0.191)	(0.070)	(0.366)
Woman	0.098	-0.131	0.365
	(0.156)	(0.101)	(0.294)
Center	0.514***	0.514***	0.757***
	(0.174)	(0.087)	(0.281)
Hidden political ideology	0.709***	0.897***	1.314*
	(0.256)	(0.214)	(0.717)
Observations	735	1,777	372
All personal characteristics	YES	YES	YES
Provincial FE	YES	YES	YES
Wave FE	YES	YES	YES

Table 5: Impact of the treatment on the MWTPT: Heterogeneity by Income Level

Ordered Logistic Regression estimates. Robust standard errors in parentheses, clustered at provincial level. Over and undervaluation means over and undervaluation of the tax burden (tax-to-GDP ratio). Other personal characteristics control variables are: centre, hidden political ideology, hidden income, worker on a temporary redundancy scheme (ERTE), unemployed, retired, self-employed, employed, live in a rental house, with children, married or living as a couple, separated/divorced, widow/er, 25-34 years old, 35-44 years old, 45-54 years old, 55-65 years old, and over 65 years old. *** p<0.01, ** p<0.05, * p<0.01

4.2. Robustness tests

As robustness tests, Table 7 employs treatments related to Public Debt, the Underground Economy (as a proxy for Tax Fraud) and Fiscal Decentralization (as previously mentioned and shown in Appendix 3) as fake treatments. In this analysis, we replace the variable *Treated* for the group that received information on the actual tax burden with the group that received information on public debt (Columns 1, 2 and 3 – Table 7), on the underground economy (Columns 4, 5 and 6 - Table 7) and on fiscal decentralization (Columns 7, 8 and 9 - Table 7). In all regressions, we include all socio-economic controls and fixed effects. In all these specifications, the coefficient for the fake treatments is not significant, and the interactions between *Treated* and

Undervaluation and *Overvaluation* are also not significant. Hence, there is no indirect impact of the provided information on the revealed MWTPT, suggesting that the cognitive effort required to reassess preferences (Haaland, Roth and Wohlfart, 2023) is too high to be influenced by information that is not directly related.

Overall, and most importantly, we believe that this reinforces the credibility of our estimates and, consequently, the conclusions regarding the impact of the treatment on the provision of information about the actual tax-to-GDP ratio on the MWTPT.

	(1)	(2)	(3)	(4)	(5)
	MWTPT	MWTPT	MWTPT	MWTPT	MWTPT
	Highly educated	Woman	Left-wing	Center	Right-wing
Treated	0.318*	0.328**	0.228	0.341	0.142
	(0.186)	(0.138)	(0.176)	(0.304)	(0.219)
Treated x Undervaluation	-0.115	0.080	-0.153	-0.257	0.252
	(0.294)	(0.215)	(0.222)	(0.425)	(0.372)
Treated x Overvaluation	0.017	-0.138	0.149	-0.293	0.322
	(0.260)	(0.226)	(0.241)	(0.394)	(0.317)
Undervaluation	0.683***	0.272	0.429***	0.597***	0.381*
	(0.167)	(0.169)	(0.145)	(0.225)	(0.232)
Overvaluation	0.037	-0.014	-0.190	0.329	-0.190
	(0.206)	(0.176)	(0.146)	(0.225)	(0.219)
Observations	1,365	1,608	1,430	816	757
All personal characteristics	YES	YES	YES	YES	YES
Provincial FE	YES	YES	YES	YES	YES
Wave FE	YES	YES	YES	YES	YES

Table 6: Impact of the Treatment on MWTPT: Heterogeneity by Other Personal Characteristics

Ordered Logistic Regression estimates. Robust standard errors in parentheses, clustered at provincial level. Over and undervaluation means over and undervaluation of the tax burden (tax-to-GDP ratio). Other personal characteristics control variables are: centre, hidden political ideology, hidden income, worker on a temporary redundancy scheme (ERTE), unemployed, retired, self-employed, employed, live in a rental house, with children, married or living as a couple, separated/divorced, widow/er, 25-34 years old, 35-44 years old, 45-54 years old, 55-65 years old, and over 65 years old. *** p<0.01, ** p<0.05, * p<0.01

Table 7: Robustness test: Fake Treatments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	MWTPT	MWTPT	MWTPT	MWTPT	MWTPT	MWTPT	MWTPT	MWTPT	MWTPT
Sample:	Full	Full	High-income	Full	Full	High-income	Full	Full	High-income
Fake treatment:	Pub	olic debt tr	eatment	Und	erground e	economy		Fiscal Decentraliz	ation
Treated	0.071	0.113	0.272	0.071	0.072	-0.033	-0.008	-0.152	0.485
	(0.059)	(0.105)	(0.329)	(0.062)	(0.111)	(0.340)	(0.130)	(0.136)	(0.717)
Treated x Undervaluation		-0.027	-0.141		-0.041	-0.222		0.188	0.257
		(0.142)	(0.361)		(0.143)	(0.343)		(0.213)	(1.411)
Treated x Overvaluation		-0.121	-0.028		0.020	0.704		0.347	-0.003
		(0.153)	(0.428)		(0.166)	(0.933)		(0.215)	(0.699)
Undervaluation		0.429***	1.022***		0.437***	0.869***		0.441***	1.261***
		(0.098)	(0.271)		(0.099)	(0.305)		(0.106)	(0.311)
Overvaluation		-0.052	-0.403		-0.110	-0.500		-0.075	-0.381
		(0.098)	(0.485)		(0.095)	(0.424)		(0.106)	(0.530)
Left-wing	1.880***	1.809***	1.907***	1.800***	1.744***	2.178***	1.972***	1.902***	1.665***
	(0.137)	(0.137)	(0.314)	(0.102)	(0.102)	(0.328)	(0.137)	(0.135)	(0.387)
University degree	0.286***	0.278***	-0.371	0.246***	0.234***	-0.325	0.163**	0.153*	-0.469
	(0.072)	(0.075)	(0.226)	(0.053)	(0.053)	(0.296)	(0.081)	(0.081)	(0.327)
Woman	-0.062	-0.024	0.097	-0.038	0.008	0.172	-0.040	-0.000	0.154
	(0.076)	(0.076)	(0.271)	(0.083)	(0.085)	(0.270)	(0.071)	(0.073)	(0.353)
Low income	0.041	0.021		0.176	0.149		0.103	0.079	
	(0.138)	(0.139)		(0.135)	(0.140)		(0.216)	(0.215)	
Medium income	0.141	0.131		0.240*	0.217		0.086	0.084	
	(0.139)	(0.140)		(0.136)	(0.144)		(0.174)	(0.176)	
High income	0.325	0.295		0.365**	0.334*		0.299	0.290	
-	(0.242)	(0.235)		(0.180)	(0.176)		(0.216)	(0.217)	
Centre	0.602***	0.572***	1.276***	0.612***	0.572***	0.975	0.682***	0.629***	0.475
	(0.082)	(0.083)	(0.365)	(0.129)	(0.129)	(0.599)	(0.137)	(0.142)	(0.425)
Hidden political ideology	0.788***	0.756***	0.968	0.894***	0.882***	1.924	1.068***	1.027***	0.585

	(0.119)	(0.123)	(0.620)	(0.122)	(0.124)	(1.184)	(0.136)	(0.137)	(0.795)
Observations	3,207	3,207	371	3,210	3,210	375	2,009	2,009	256
All personal characteristics	YES								
Provincial FE	YES								
Wave FE	YES								

Ordered Logistic Regression estimates. Robust standard errors in parentheses, clustered at provincial level. Over and undervaluation means over and undervaluation of the tax burden (tax-to-GDP ratio). Other personal characteristics control variables are: centre, hidden political ideology, hidden income, worker on a temporary redundancy scheme (ERTE), unemployed, retired, self-employed, employed, live in a rental house, with children, married or living as a couple, separated/divorced, widow/er, 25-34 years old, 35-44 years old, 45-54 years old, 55-65 years old, and over 65 years old. *** p<0.01, ** p<0.05, *p<0.01

5. Conclusions

We examine how information influences the revealed marginal willingness to pay taxes (MWTPT) through a four-wave randomized survey experiment conducted during the COVID-19 pandemic. Taking advantage of this survey data, we posed the following research question: are the revealed preferences about paying taxes biased due to misinformation about taxation? To address this issue, the survey includes an experiment: a randomly selected group receives quantitative information on Spain's tax burden and other countries across different years, along with qualitative information about the fundamental trade-offs associated with taxes.

The combination of quantitative and qualitative information has a positive and significant effect on the revealed MWTPT. However, when we disentangle these effects by examining the interaction of underestimation or overestimation of the actual tax-to-GDP ratio with treatment, we find that quantitative information does not have a general impact on MWTPT, whereas qualitative information has a positive effect. The price of democracy is downward-biased and qualitative information seems to counteract this bias.

Furthermore, an analysis of income heterogeneity indicates that high-income individuals are particularly sensitive to information. On the one hand, those who underestimate the tax burden reduce their MWTPT after receiving quantitative information about the actual tax burden. This result may be related to the redistributive role of taxation and the influence of reference-dependent preferences (Charité, Fisman, Kuziemko and Roth, 2022): when wealthy people realise that they are contributing significantly to redistribution relative to a reference-point, they lower their MWTPT. On the other hand, qualitative information has a positive effect on the high-income group, which is stronger than for the average respondent.

From these results, we conclude the information can shape perceptions of the tax system and, consequently, influence individuals' willingness to contribute to the public sector. Hence, misinformation can distort revealed preferences regarding taxation, which is the price of democracy. In order for the decision-making process in democracy to align as closely as possible with the socially efficient scale of the public sector (Durán-Cabré and Esteller-Moré, 2023), a necessary condition is to provide basic information about taxation, particularly to the key players: high income individuals, that is, those who are supposed to contribute the most. The cost of this policy appears small in comparison to the expected benefits.

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Appendix 1

A question about sincerity: *Did you answer paying proper attention? This would not change your reward*.

9 nicequest	Encuesta	AYUDA
Antes de pasar a la siguiente ta has dado hasta ahora. Es fundai encuestados que hayan prestac en modo alguno a los Korus que	nda de preguntas, nos gustaría preguntarte sobre las mental para nuestro estudio que solo incluyamos las i do atención a las preguntas. Contestes lo que conteste e vas a percibir por contestar a la encuesta	respuestas que nos respuestas de los es aquí, no afectará
Con total sinceridad, ¿podemos sin prestar la debida atención?	; utilizar tus respuestas o deberíamos descartarlas por	que has contestado
⊖Sí, he prestado atención a las pregu	untas en todo momento y creo que deberiais utilizar mis respuestas	s para el estudio.
⊖No, no he prestado la debida atenc	ión a las preguntas y creo que no deberiais utilizar mis respuestas p	para el estudio.
& Variables		$\langle \rangle \rangle$

A random quality check question: in the pictures below, (i) *How much is one plus three?;* (ii) *Select the option 'Never';* and (iii) *Select the year we are currently in.*

9 nicequest	Encuesta	AYUDA
Esta pregunta nos permitirá sal guardando correctamente.	per si estás prestando atención y comprobar que tu	us respuestas se están
Cuánto suman uno más tres: ⊖Uno ⊖Dos ⊖Tres		
⊖Cuatro ⊖Más de cuatro		
Ø Variables		$\langle \rangle \rangle$
9 nicequest	Encuesta	AYUDA
Esta pregunta nos permitirá sab guardando correctamente.	per si estás prestando atención y comprobar que tu	us respuestas se están
Selecciona la opción 'Nunca': OSiempre OAveces ONunca		
& Variables		$\bigcirc \bigcirc$
9 nicequest	Encuesta	AYUDA
Esta pregunta nos permitirá sab guardando correctamente.	per si estás prestando atención y comprobar que tu	us respuestas se están
Selecciona en qué año estamo: 2023 2024 2025 2026 2027	s actualmente:	
Ø Variables		$\langle \rangle$

Appendix 2

Treatment: Tax-to-GDP ratio (aggregate level of taxation)

Picture I: Provision of Quantitative Information

Recaudación im España 3 EE.UU. 3	n atención los s elimp npositiva en relació	iguientes dat DOSIȚI ón al PIB	∞s VO (oresi	ón f	iscal)	(I)
Recaudación im España 3 EE.UU. 3	el imp npositiva en relació	DOSITI	vo (l	oresi	ón f	iscal)	(I)
España 3 EE.UU. 3	2001 2005						
España 3 EE.UU. 3	2001 2003	5 2009	2013	2017	2019	2020	
EE.UU. 3	37,96% 39,71	% 34,95%	38,80%	38,17%	39,27%	40,79%	
	32,26% 30,86	% 28,28%	31,40%	30,74%	30,00%	30,34%	
Dinamarca 5	53,98% 56,20	% 53,74%	54,58%	52,76%	53,61%	51,61%	
Italia 4	44,15% 43,16	% 45,99%	48,10%	46,32%	47,07%	47,79%	
Euente: Fondo Monetario Internacional, IMF DataMapper							

Picture II: Provision of Qualitative Information (Trade-off)

9 nicequest	Encuesta	AYUDA
Nivel im • Elevados niveles de p sea sobre los incentiv • En cambio, cuanto m mayores garantías, en • Como hemos visto er niveles de presión fis	positivo (presión fiscal) resión fiscal pueden conllevar <u>efectos indeseados sobre la e</u> ros a emprender, invertir, o incluso a trabajar ás elevada sea la presión fiscal, el sector público puede pres ntre otros, los servicios relacionados con el <u>Estado del Biene</u> n la tabla de datos, países desarrollados diversos presentan <u>g</u> cal) (& II) <u>conomía</u> , ya star con <u>estar</u> diferentes
• Variables		
		\mathbf{x}

Appendix 3

Other treatments:

Picture I: Provision of Quantitative Information about Public Debt

9 niceque	est		E	incues	ta			AYUDA
Ahora observa	con atenci	ón los sigu	ientes dato	DS				
Endeudamie	End	euc	dam	ient	to p	úbli	co (I)	
	2001	2005	2009	2013	2017	2019	2020	
España	54,05%	42,43%	53,26%	95,78%	98,56%	95,47%	117,10%	
EE.UU.	53,15%	65,45%	86,74%	104,88%	105,91%	108,98%	127,10%	
Dinamarca	48,51%	37,41%	40,18%	44,05%	35,53%	30,33%	43,40%	
Italia	108,88%	106,55%	116,59%	132,43%	134,11%	134,77%	155,60%	
<u>Fuente</u> : Fondo Monetario Internacional, <i>IMF DataMapper</i>								
Variables								<

Picture II: Provision of Qualitative Information (Trade-off)



Picture I: Provision of Quantitative Information about the Underground Economy (as a proxy of Tax Fraud)

nicequest			Encu	uesta			AUUA
iora observa con a	tención los si	guientes d	atos				
_	,				c		(1)
Econ	omía	sum	ergi	da-	tra	ude fiscal	(1)
Fconomía sum	ergida en relación :	al PIR					
	2001	2005	2009	2013	2015	Promedio (1991-2015)	
España	23,02%	23,32%	24,24%	24,35%	22,01%	24,52%	
EE.UU.	8,01%	7,86%	9,18%	7,66%	7,00%	8,34%	
Dinamarca	14,23%	13,75%	16,33%	15,24%	14,70%	15,19%	
Italia	23,55%	24,62%	27,31%	24,49%	22,97%	24,95%	
Fuente: Fondo	Vonetario Internac	ional, IMF Wo	rking Paper,	18/17			
Variables							
							(<

Picture II: Provision of Qualitative Information (Trade-off)

9 nicequest	Encuesta	AYUDA
Economi Desafortunadame manera que utiliza	Ía sumergida-fraude fiscal (& nte, no disponemos de datos comparables entre países sobre fraude fiscal, a aremos el concepto de economía sumergida para aproximar tal fenómeno) de
 La presencia de bienes y servicio 	e fraude fiscal <u>erosiona la capacidad redistributiva y el nivel de prestación de</u> jos públicos	2
Parte del fraude <u>dificultad de int</u>	e puede venir explicado por los <u>elevados niveles de presión fiscal</u> , así como t <u>erpretar las leyes fiscales</u>	la
Como hemos vi <u>niveles de econ</u>	isto en la tabla de datos, países desarrollados diversos presentan <u>diferentes</u> omía sumergida/fraude fiscal	
Variables		<

Picture I: Provision of Quantitative Information about Tax Decentralization

9 nicequest		Encuesta			AYUDA		
Ahora observa con atenc	hora observa con atención los siguientes datos						
Distr La distrib	ibuciói ución de los im	n de in	npuest	Siguiente:			
	España	Alemania	Francia	EE.UU.			
Gobierno central	63%	48%	71%	52%			
Gobierno autonómico	23%	38%	0%	28%			
Gobierno local	14%	14%	29%	20%			
<u>Fuente</u> : OCDE							
Ø Variables					$\overline{\mathbf{a}}$		

Picture II: Provision of Qualitative Information (Trade-off)

9 nicequest	Encuesta	AYUDA
Distribu	ución de impuestos (& II)	
 Si una Comunidad A para financiar sus g dichos servicios púl <u>autonómicos</u>. 	Autónoma recauda una parte considerable de los impuesto astos, los ciudadanos podrán visualizar mejor el coste de blicos y, por tanto, <u>evaluar mejor la actuación de sus políti</u>	os cos
 No obstante, existe contribuyentes de r para financiar el gas 	el riesgo de <u>que las regiones compitan</u> entre sí para atrae manera que los impuestos acaben siendo <u>demasiado bajos</u> sto público.	r
Como hemos visto o impuestos entre los	en la tabla de datos, la <u>distribución de la recaudación</u> de lo s diferentes niveles de gobierno <u>varía según los países</u> .	05
& Variables		\checkmark



