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# THE ROLE OF THE CARROT AND STICK IN TAX COMPLIANCE IN A DECENTRALISED CONTEXT[1]

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ABSTRACT: We analyse whether decentralisation affects tax morale through both greater trust in institutions (the carrot) and greater perceived tax enforcement (the stick), two drivers of compliance that operate via the promotion of voluntary compliance and deterrence, respectively. We take advantage of the Spanish case characterised by a general regime, which is partially decentralised, and the so-called foral regime, operated in two regions, which is fully decentralised (i.e. high tax regulatory and administrative powers). We draw on data from a unique survey that are representative both of the national level and of the foral regions. Under the foral regime, the average citizen neither presents a higher level of tax morale, nor has the perception of a higher level of enforcement. Thus, any structuring of the tax administration within a federal system cannot be based on what are presumed to be higher levels of compliance resulting from the decentralisation of the administration.

JEL Codes: H11, H71, H77
Keywords: Fiscal Federalism, Decentralisation, Tax Morale, Tax Compliance, Survey Data

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## 1. Introduction

Tax morale, the intrinsic motivation to pay taxes, is considered an important driver of tax compliance and is believed to be heavily influenced by institutional trust (Luttmer and Singhal, 2014).[1] For this reason, if decentralisation promotes trust in government and public institutions (Ligthart and van Oudheusden, 2015), *ceteris paribus*, we would expect a higher level of tax morale in a decentralised context (i.e. acting as a *carrot*) and, hence, a higher rate of voluntary compliance. At the same time, if citizens perceive a higher level of enforcement when a tax administration is decentralised (i.e. acting as a *stick*), we would also expect the rate of compliance to be higher reflecting this deterrent. All in all, testing the impact of these two drivers of tax compliance in a decentralised context is important because, if they are indeed influential, the institutional organisation of tax administration (that is, the degree to which it is decentralised) would matter.

Here, we address this particular issue with reference to Spain, a country characterised by two substantially different institutional models of tax decentralisation: on the one hand, a partially decentralised, common regional financing system, and, on the other, a special, fully centralised system, the so-called *foral* regime, which operates in just two northern regions of the peninsula, the Basque Country and Navarre. The two regimes present significant differences in their respective tax regulatory and administrative powers and in the amount of disposable public resources per inhabitant given the asymmetric design of interregional redistribution between the two. These institutional differences merit a more detailed explanation.

Under the common financing regime, Spain's regions or, more properly, Autonomous Communities (hereinafter, ACs), only enjoy certain regulatory powers with regard to personal income tax (PIT), but not with regard to the other main revenue-generating taxes, including value added tax (VAT), corporate tax and excise taxes. Indeed, the *Agencia Estatal de Administración Tributaria* (AEAT), Spain's national tax administration,

[1] The earliest mentions of tax morale date from the 1960s and are attributable to the so-called Cologne School of tax psychology. These German scholars identified tax morale as an attitude held towards tax compliance (Torgler et al., 2010).

is responsible for the collection and management of all these taxes, while the regional tax authorities are left to administer only the minor taxes (concerned, in the main, with wealth). In contrast, and based on historical rights recognised in the Constitution, the *foral* regime operated by the Basque Country and Navarre means their regional administrations have full authority over the regulation of all taxes, with the exception of VAT and excises, which are regulated nationally in line with EU harmonisation requirements. Additionally, these two regional administrations are solely responsible for collecting and managing all taxes. As such, the *foral* regime can be considered unique – the most decentralised system in the world – given that the central government does not collect any general taxes in these two regions (Zubiri, 2017).

The two regimes are further differentiated in terms of Spain's system of interregional redistribution. Thus, in addition to taxes, the common regime regions receive (or contribute to) revenues from various equalisation grants (e.g. the Guarantee Fund for Fundamental Public Services), which may be either vertical or horizontal. Yet, the *foral* regions collect all their tax revenues and, as such, compensate central government for the expenditure made on behalf of their residents. This compensation, however, does not include funds for equalisation. Therefore, although the average GDP per capita is above the national average in the Basque Country and Navarre, the two ACs do not contribute to the interregional redistribution under the common regime, and, for this reason, their per capita disposable public revenues are significantly higher than the national average.[2]

Here, exploiting the marked differences between the two regional financing systems operating within Spain, we conducted a unique survey aimed at estimating the determinants of the margins related to tax compliance. We draw on survey data from a sample of 3,017 observations, ensuring statistical representativeness at the national level, as well as for specific ACs, including the *foral* regions (the Basque Country and Navarre). More specifically, we use the answers to questions concerning tax morale, tax fraud (in Spain as a whole and in each respective AC), and the perceived efforts being

[2] For equal responsibilities, the amount of per capita finance provided by the *foral* system is calculated to be between 32 and 47% higher than that of the common system (López Laborda and Zabalza, 2017).

made by the administration to reduce tax fraud. Ultimately, we seek to identify whether the high level of tax decentralisation enjoyed by the *foral* regime has a particular impact on each of these variables, controlling for the personal characteristics of the respondents and basic regional features.

In contrast to expectations, *ceteris paribus*, the average citizen under the *foral* regime does not display a higher level of tax morale than that shown by an average resident under the common regime. Nor do we find any differences between the two regimes in terms of perceived levels of tax enforcement. Hence, out hypothesis regarding the pre-eminence of a fully decentralised administration does not hold for the Spanish case. However, residents under the *foral* regime do perceive lower rates of tax fraud in their AC with respect to those perceived by residents in common regime regions. This finding is somewhat paradoxical given the absence of a positive impact of the two potential drivers of compliance. Yet, a tentative explanation for this contradiction might lie in the asymmetric nature of the country's system of interregional redistribution. Thus, *foral* residents might perceive less tax fraud because of the higher quality of their public services compared to that of the services in regions with fewer resources.[3] When we test this hypothesis, we find that around one-third of the lower perception of tax fraud among *foral* residents is attributable to higher resource levels, while the rest can be attributed to the *foral* regime itself. As such, this only partially explained result merits further research.

This paper contributes above all to the literature analysing the relationship between decentralisation and tax morale. In this field, for example, Güth et al. (2005) provide experimental evidence of the impact of different federal tax and spending regimes on tax morale: the propensity to pay taxes being higher in a decentralised than in a centralised tax structure. Likewise, Torgler and Werner (2005), using in this case data from German municipalities, show that greater fiscal autonomy leads to a higher tax morale. Later, drawing now on data from Switzerland, Torgler et al. (2010) evaluate the

[3] Citizen perceptions regarding the quality of regional government might be another factor to consider. According to the European Quality of Government Index (Charron et al., 2022), the Basque Country and Navarre head the Spanish rankings in this regard.

impact of federalism on tax morale and the size of the shadow economy and provide evidence that institutions that respect citizen preferences (where a high degree of local autonomy allows the expression of these preferences) increase their motivation to pay taxes. Analysing data from the United States, Jimenez and Iyer (2016) find that taxpayer trust in government has a significant influence on both perceived fairness of the tax system and compliance decisions. Matthaei et al. (2023), using large-scale survey data from European countries, provide evidence that trust in the European Union, the United Nations and the national government are significantly related to individual levels of tax morale, but trust in the national government, the closest of these institutions, is the main factor driving tax morale. More recently, in the context of the United States, Nathan et al. (2024) obtain empirical evidence of a greater willingness to pay taxes when taxpayers believe other households are paying their fair share. In other words, a taxpayer's tax morale can be affected by his perception of the extent to which other taxpayers are compliant.

Several papers have also analysed tax morale in Spain. Torgler and Schneider (2007), in a study of tax morale in three multicultural contexts – that is Switzerland and Belgium, in addition to Spain – find certain regional and cultural differences but conclude that, in general, greater trust in political institutions leads to higher tax morale. Alm and Gomez (2008) find a strong positive relationship between tax morale and the perceived benefits of the public delivery of goods and services. Moreover, they find a strong negative relationship between tax morale and perceptions of the size of fiscal fraud. Finally, Martinez-Vazquez and Torgler (2009) analyse the evolution of tax morale in Spain since 1981 and find a steady increase up to 1995, thanks to the restoration of democracy, the strengthening of social and economic institutions, the process of fiscal decentralisation and the creation of a welfare state.

As noted, the relationship between decentralisation and tax morale may be affected by the specific characteristics of the regions in each country. In Spain, however, we show that residents in a fully decentralised region do not present higher levels of tax morale than those presented by citizens living in a partially decentralised region. This result is not unexpected because, as we have already shown in Durán-Cabré *et al.* (2024),

Spanish citizens have very limited awareness of the tier of government to which they pay their taxes, including, somewhat surprisingly, those living in a *foral* region. It is unlikely that decentralization impacts tax morale if citizens are unaware that taxes are paid to their regional government.

The organisation and degree of decentralisation in tax administration internationally present a high degree of variation (Mikesell, 2003) and, indeed, there is no consensus as to the best model of organisation. In the debate as to what is the appropriate level of tax decentralisation, the key question is which tier of government is responsible for the administration and enforcement of the taxes. As Martinez-Vazquez and Timofeev (2010) suggest, two fundamental objectives in this regard need to be considered from a normative point of view: namely, the maximisation of revenues subject to the constraints of both the administration and compliance costs, and the accountability of governments to taxpayers. The trade-off between these two objectives (i.e. efficiency vs accountability) results in many different ways of organising tax administration (Vehorn and Ahmad, 1997). In practical terms, the organisation of tax administration depends on both technical and political considerations (Mikesell, 2003).[4] Despite the marked institutional differences between the two regional systems in Spain, the average citizen in the *foral* regime does not, according to our estimates, perceive a higher level of enforcement. This result clearly needs to be taken into account when policy makers argue in favour of decentralisation based on a belief in its potential benefits in terms of greater compliance.

The rest of the paper is organized as follows. In Section 2, we describe the two regional financing systems operating in Spain, and highlight the differences between the *foral* and common regimes. In Section 3, we present the questionnaire used to obtain the survey data, establish our hypotheses and outline our empirical framework. In Section 4, we present our main results and robustness tests, while Section 5 concludes.

[4] Tax administration in federal countries can serve as another strategic tax instrument in the hands of sub-central authorities, along with the potential setting of statutory tax parameters. Through their enforcement strategies and the level of compliance costs, tax administrations indirectly determine effective tax rates and the total amount of revenues collected (Durán-Cabré, Esteller-Moré, Salvadori, 2015).

## 2. Spain's two regional financing systems

Spain has traditionally been a unitary country, but its 1978 Constitution created an intermediate tier of government at the regional level, that of its Autonomous Communities (hereinafter, ACs), and granted them considerable powers of self-government.[5] Since that date, the ACs have gradually acquired substantial powers and responsibilities from central government, and today play a pivotal role in providing essential public services such as education, health and social services — the cornerstones of the welfare state. Notably, regional public expenditure accounts for 33% of overall general government expenditure, a proportion which surpasses that of both Austria and Germany, but which is in line with that of Belgium, the other federal EU countries (OECD, 2023). Spain's ACs are financed by two different regional financing systems: the common regime encompassing 15 of the ACs, and the *foral* regime which is operated in just two northern regions, the Basque Country and Navarre. This latter regime has deep historical roots that are enshrined in the Constitution and is substantially different from the common regime.[6]

The common regime regions are financed primarily with the revenues collected from the national taxes that are either fully or partially transferred ('ceded') to the regions.[7] As of 2009, the ACs collect 50% of PIT and VAT, 58% of manufacturing excise taxes, and 100% of other taxes, such as the inheritance tax, wealth tax and tax on property transactions. In addition to these revenues, the regions have some regulatory powers over a few ceded taxes. Thus, they can set their own general tax schedule and introduce regional tax credits, or modify the personal and family allowances with respect to PIT. In the case of the inheritance and wealth taxes, the common regime ACs are allowed to fix their own tax rates and brackets, and to introduce a wide range of tax credits,

[5] The Spanish Constitution, however, does not define Spain as a federal system. The country's model of territorial decentralisation shares some similarities, but also some differences, with other forms of political decentralisation, and while some authors advocate the adoption of fully fledged federal institutions, many others oppose (Sala, 2013).

[6] See Zubiri (2017) for a comprehensive discussion of the principles and characteristics of the *foral* system.

[7] The ACs can also introduce their "own" taxes, with full regulatory and administration powers. However, these "own" taxes can only levy bases that are not already controlled by central or local governments, which in practice means there is little tax room left to the ACs. Over time, some ACs have introduced new taxes (see Kölling et al., 2023), but they account for little more than 1% of all regional revenues.

including a 100% credit. However, the ACs have no regulatory powers over VAT or manufacturing excise taxes.

In addition to certain regulatory powers, the common regime regions also take charge of the administration of some minor taxes (e.g. the inheritance, wealth and property transactions taxes), but not of the most significant taxes in terms of actual revenues collected (i.e. PIT, VAT, and excise taxes). The AEAT is the sole body responsible for the collection and management of these taxes.[8] However, these institutional arrangements are completely different under the *foral* regime.

*Foral* governments, in contrast, have comprehensive powers over the regulation and administration of taxes. For instance, they have their own PIT, corporate tax and wealth tax regulated by their own laws.[9] As for indirect taxes, their power to regulate is more constrained as a consequence of EU harmonisation requirements. Nonetheless, they have full power to collect and manage all taxes, with the exception of tariffs and Social Security contributions. *Foral* governments design their own tax returns and the assistance programs to complete tax returns, and also carry out any control actions, including audits, with regard to compliance. Pictures A1 and A2 in the Appendix I highlight the differences in the respective PIT returns and assistance programs of the two regimes and are a good indication of the perceptions a taxpayer is likely to have about the role played by the respective tax administrations. Common regime taxpayers, as we see, deal solely with the national tax administration (i.e. note the distinctive AEAT logo) when they pay PIT, their own ACs having no administrative powers over this tax. In contrast, *foral* regime taxpayers deal solely with the *foral* tax administration (illustrated here by the logo for Navarre's tax authority).

[8] This reflects the current situation, but some ACs and experts have advocated a stronger role for common regime regions in the administration of taxes. The report of the official Committee of experts for a review of the regional financing system, set up in 2017 by the Spanish government, advocated an integrated tax administration, a professional administration body in which the central government and regional governments appointed the same number of members to the board of management, along the lines of the Canadian Tax Agency.

[9] In fact, the *foral* system operates slightly differently within the Basque Country: as the origin of the system dates back to the 19th century, when there were provinces but no regions in Spain, the *foral* governments coincide with that of each province, namely Álava, Guipúzcoa and Vizcaya, the three provinces that make up the Basque region.

Another substantial difference between the two systems concerns the mechanisms of interregional redistribution. In addition to taxes, the regions under the common regime receive (or contribute to) revenues from various equalisation grants, which can be either vertical or horizontal: the Guarantee Fund for Fundamental Public Services plus three adjustment funds (the Global Sufficiency, the Competitiveness and the Cooperation Funds). However, the *foral* regions collect all taxes and, consequently, they must compensate the central government for the expenditure made on behalf of their residents. This compensation, though, does not include equalisation grants. Therefore, as their average GDPs are higher than the national average, and they do not contribute to the equalisation grants outlined in the common regime, their per capita final revenues are significantly higher than the national average.

## 3. Empirical Framework: Survey Data

### 3.1. *The Data*

To estimate the impact of the institutional setting (*foral* vs common) on various margins related to tax compliance, we use survey data. We designed an on-line survey, which was monitored and processed by a professional survey firm, *Netquest*, known for its extensive, high-quality panel of potential respondents.[10] Appendix II presents the original survey in Spanish. Launched in early November 2021, participation was by invitation only. The survey included an item about sincerity in responding and a quality check item to verify respondents' attention. Additionally, responses made 20% faster than expected were excluded from the sample. Respondents, who were required to be over the age of 18 and resident in Spain, were rewarded through a programme of in-kind compensation.

The sample consists of 3,017 observations, which ensures statistical representation at the national level as well as for specific regions, including Catalonia, the Canary Islands,

[10] https://www.netquest.com/en/online-surveys-investigation

the AC of Madrid, and the regions of the *foral* regime (the Basque Country and Navarre). The main descriptive statistics for the whole sample, but also for both regimes separately, are presented in Table 1. Ideologically, most respondents self-locate on the left of the political spectrum (48.59%),[11] while 11.9% preferred not to respond to the question concerning their ideology (the base category for ideology). The average age of respondents is 46.1, ranging from 18 to 92 years old. The variable *Older* is equal to 1 for individuals over the age of 45 years old. Slightly more than half of the respondents (51.64%) have a university degree and 31.02% are qualified as high income, meaning their monthly earnings exceed 2,400 euros (about 40% above the median income per household member in Spain, approximately).[12] Finally, *Pro Autonomy* is a dichotomous variable equal to 1 for individuals who would like their region to be granted more political autonomy or even independence. Here, 37.12% of the individuals surveyed aspire to greater political autonomy for their region. The survey also provides information about the respondents' number of children, marital status (*Married*) and employment status. In the case of this last variable, we distinguish between *Self-employed*, *Inactive* (retired and students) and the *Rest* (currently employed in the private or in the public sector, or searching for a job) and our base category is *Employees*.

Our empirical analysis also considers several characteristics of the respondents' AC of residence, including, an index of GDP per capita in 2021[13] and an index of the surface area (square metres).[14] These regional variables are expressed as an index with respect to the largest regional value: in the case of GDP per capita, the value of 1 is awarded to the AC with the highest GDP per capita, i.e. Madrid, while the lowest value (0.5460) is assigned to Andalusia; likewise, for the surface area index, Castilla y León takes the value 1, as the largest region, while, the smallest, Balearic Islands, takes the value 0.0530. Hence, in each case, the extreme values indicate the range of the corresponding index,

[11] On a scale from 1 to 10, we identify individuals as *Centre* at 5; *Left*, between 1 and 4; and *Right*, between 6 and 10.

[12] The remaining 68.98% either did not respond to this question or their monthly household income is below that amount.

[13] Source: National Institute of Statistics (INE): https://ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736167628&menu=ultiDatos&idp=1254735576581

[14] Source: National Institute of Geography (IGN): https://www.ign.es/web/ane-datos-geograficos/-/datos-geograficos/datosPoblacion?tipoBusqueda=CCAA

highlighting the degree of regional variation.

In the case of the *foral* regime, there are 806 observations, which guarantees the representativeness of these two regions. The *foral* regions are relatively small (surface area index=0.0934; with the Basque Country, 0.0767, being particularly small) and relatively rich (GDP per capita index=0.9017; again, the Basque Country being particularly wealthy, at 0.9257). Ideologically, these regions lean more to the left than regions subject to the common regime. Their residents also tend to be slightly more highly educated and there is a greater share of high-income individuals. The proportion of inactive individuals is markedly lower and, interestingly, the share of female respondents is higher. In spite of the high level of political autonomy already enjoyed, the share of individuals who would like even greater autonomy (including independence) is higher than in the common regime regions. In short, both personal and regional characteristics differ substantially between the two regimes, which makes any comparison of the average variables related to tax compliance uninformative. Within each regime, some of our sample characteristics differ from actual data which means our sample selection could generate a bias in the estimates. In Section 3.2 below, we explain how we tackle these issues for empirical purposes.

The first margin related to compliance is *Tax Morale*, which we define on the basis of responses (from a choice of three) to the following question posed in the survey:[15]

*What is your opinion about tax fraud?*
*- It is never justifiable*
*- It is always justifiable*
*- It is sometimes justifiable*

We make an assumption about the respondents' moral stance with regard to tax fraud, considering them either moral or otherwise. Hence, *Tax Morale* is defined as a dichotomous variable equal to 1 if the response to the above question is 'It is never justifiable'. Given the high estimated levels of tax incompliance in Spain (Fernández

[15] In Spanish, "*¿Cuál es tu opinión en relación con el fraude fiscal*?" Possible responses: "*Nunca puede estar justificado* / *Siempre está justificado* / *En ocasiones puede estar justificado*".

Leiceaga et al., 2018), the respondents show a surprisingly high level of tax morale (for the aggregate sample, 0.8114; 0.7987 and 0.8462 for the common regime and *foral* regime, respectively).

The second margin is not a preference variable, but rather a perception about the level of tax fraud. Thus, we first asked about the level of perceived fraud in the whole of Spain, and, second, about the perceived level in the respondent's AC of residence. For example, for Spain as a whole, we asked:[16]

*In your opinion, do you think that*
*there is a lot of, quite a lot of, little or very little tax fraud in Spain?*

We parametrise the endogenous variable *Perceived Tax Fraud in Spain* as 1 (very little), 2 (little), quite a lot (3) and a lot (4). Hence, the value of the variable, and likewise that of *Perceived Tax Fraud in the AC*, increases with the perception of fraud. In general, the perception is that there is a lot of fraud, especially in Spain as a whole (for the full sample, the perceived fraud rating was 3.5177 for Spain compared to 3.2324 for the respective AC of residence). The main difference between tax regimes concerns the perception of fraud in each of the respondent's AC of residence: 3.2990 and 3.0496 in the common regime and the *foral* regime, respectively. *Ceteris paribus*, the perceived rate of tax fraud in Spain should not differ across regimes, as this question is unrelated to enforcement or trust in institutions based on the level of decentralisation in the place of residence of the respondents.

The final question is likewise concerned with determining the respondents' perceptions: specifically, the perceived efforts of the administration to reduce tax fraud. In this case, we do not distinguish between tiers of government, given that the nature of the taxes administered, for example, by the national and regional administrations in the common

[16] In Spanish, "*En tu opinión, ¿crees que en España existe mucho fraude fiscal, bastante, poco o muy poco fraude fiscal?"* Possible responses*: "Existe mucho fraude fiscal* / *Existe bastante fraude fiscal* / *Existe poco fraude fiscal* / *Existe muy poco fraude fiscal*". Likewise for the perceived fraud in the AC.

regime, is rather different. Respondents were asked the following question:[17]

*Currently, do you think the administration makes a lot of, quite a lot of, little or very little effort to reduce tax fraud?*

We parametrise the variable *Perceived Tax Enforcement* as 1 (very little), 2 (little), 3 (quite a lot) and 4 (a lot). Hence, again, the value of the variable increases in line with the perceived level of tax effort. The perceived effort is quite low, just below 2, and there is hardly any difference between the average values of the two regimes.

Given the specific aim of this paper, one of the challenges that our empirical framework has to tackle is ascertaining whether, given the differences in the characteristics of the respondents in each subsample (*foral* and common) and also the differences at the aggregate level (AC), the institutional differences between regimes have an impact on preferences (*Tax Morale*) and on perceptions (rest of the variables). In what follows, we explain the empirical framework .

3.2. *Empirical Framework*

For each variable, we propose estimating the following OLS equation:

$$\boldsymbol{Z_{ij}} = \Phi Foral_j + X_{ij}b + \mu_{ij} \qquad [1]$$

where $Z_{ij}$ represents each of the four variables defined in Section 3.1, the information being obtained from the survey responses provided by individual-*i* residing in regime-*j*; $Foral_j$ equals one if the respondent resides either in the Basque Country or Navarre, and $\Phi$ is the estimated impact of that dummy variable on the corresponding variable of compliance; $\mu_{ij}$ is the estimation error with the standard statistical properties. $X_{ij}$ is a vector of personal characteristics of the respondents and of the region-*j* in which they reside (identified in the previous section and summarised in Table 1), and *b* is the

[17] In Spanish, "*¿Crees que, en la actualidad, la Administración hace mucho, bastante, poco o muy poco esfuerzo para luchar contra el fraude fiscal?*" Accepted responses: "*Mucho* / *Bastante* / *Poco* / *Muy poco*".

corresponding vector of estimates. Our aim is to infer causality from Foral to each of the four variables related to tax compliance; however, as a guarantee of causal inference, we are faced by various challenges.

In the basic OLS model, we implicitly assume that the endogenous variable is continuous, which is not the case. *Tax Morale* is a dummy variable (0: no tax morale; 1: otherwise), while the other three variables are categorical ranging from 1 (lowest level) to 4 (highest). Estimating a linear model has the advantage of facilitating the interpretation of the *Foral* estimate on the probability scale, as well as that of the variables included in $X_{ij}$. However, the linearity assumption does not restrict the conditional probability to values between 0 and 1 (or between 1 and 4),[18] which is at odds with the nature of the endogenous variable. Thus, a non-linear function for modelling conditional probability can be used instead. To confirm the validity of the OLS regressions for inference purposes, we also estimate model [1] using a probit (for *Tax Morale*) and ordered probit regressions (for the rest of the variables). In contrast with the OLS estimation in [1], the impact of any independent variable on $Z_{ij}$ is therefore non-linear, and so the marginal effect cannot be immediately inferred from the regression estimates.

The second challenge we face is the representativeness of our estimates, that is, we need to ensure that they are unaffected by the specific composition of our sample (*selection bias*). According to the information in Table 1, a number of our sample characteristics – the case of both the common and the *foral* regimes – do not align fully with those of the whole population. We are therefore obliged to undertake a "poststratification weighting" (see, e.g., Stantcheva, 2022) to fix this misalignment. To do so, we perform a stepwise adjustment of survey sampling weights so as to achieve known population margins and we repeat this process over a specified maximum number of iterations.[19]

[18] The OLS residuals also violate the homoscedasticity assumption. That is why, in all our regressions, we calculate robust standard errors.

[19] This is done by means of the *ipfweight* STATA command.

Model [1] is a *differences estimator with additional regressors,* $X_{ij}$, within which we include personal as well as regional characteristics. On the one hand, as far as the set of personal characteristics are concerned, we can reasonably assume *Foral* to be independent of them, that is, the 'common support' between both types of region is rich enough. This assumption of *conditional mean independence* suggests an OLS multivariate analysis should produce an unbiased estimate of *Foral*. Nevertheless, we test this assumption by performing a matching method, namely that of coarsened exact matching (CEM) (see Blackwell *et al*., 2009). Here, matching methods aim at minimizing the imbalance between the respondents in the *foral* regions and those residing elsewhere, taking into account the potential confounding effects of pretreatment control variables at the individual level. CEM does so by grouping or coarsening the data into bins, exact matching the data and then running the analysis on the matched data. Thus, we achieve a type of "monotonic imbalance bounding" with a high number of attractive statistical properties (Iacus *et al.*, 2012). On the other hand, some regional characteristics might well be correlated with *Foral* and, as such, they could act as confounding factors that are likely to bias the estimate of *Foral*. To account for this potential impact, we test their relevance by including a number of regional covariates in the multivariate analysis, specifically, indices of GDP per capita and surface area. Next, we present the results of our empirical analysis.

## 4. Empirical Analysis

### *4.1. Basic Results*

We seek to infer whether there are statistically significant differences in relevant variables related to tax compliance between individuals residing in the *foral* regime and those residing in the rest of the country. In Table 2, we show the results for our key variable, *Tax Morale*, as defined in Section 3.1. We estimate a linear probability model (LPM) using OLS. According to the column (1) estimates, *ceteris paribus*, left-wing individuals (+0.128), and relatively older people (+0.051) reveal a higher level of predisposition to comply with their tax obligations with respect to their counterparts. In contrast, inactive individuals (-0.033), the self-employed (-0.155) and individuals in favour of greater political autonomy for their region (-0.032) are less intrinsically predisposed to comply with the tax law. The impact of the rest of covariates is

statistically insignificant. Thus, ideology and self-employment matter the most, outcomes that are in accordance with expectations.[20]

Being resident in the *foral* regime causes the level of tax morale to increase (+0.028). Compared however to the aforementioned determinants, the estimated marginal impact of *Foral* – only statistically significant at the 90% level – is small (*Left* being 4.6 times larger, and *Older* 1.8 times larger). Yet, as Table 1 shows, the mean values of some of the socio-economic characteristics of our sample differ with respect to those of the real data, which means our sample composition is biased. To address this, in column (2), we re-estimate the model using proper weights and by so doing we are better able to guarantee the representativeness of our estimates. Now, we find that the point estimate of *Foral* is markedly lower and that it is no longer significant. The rest of our results remain unchanged.

As discussed in Section 3.2, when comparing the two tax regimes, regional circumstances might confound with the corresponding regime and, as such, they might bias our estimate of interest, i.e. *Foral*. For example, *foral* regions are both relatively rich and small (see Table 1). For this reason, in column (3) of Table 2, while still applying the poststratification weighting, we control with indices of GDP per capita and of surface area, as defined and explained in Section 3.1. The estimated impact of *Foral* continues to be insignificant, while the significance of the covariates previously identified remains. For the rest of the variables, the structure of the tables is identical. Thus, from this point on in our analysis, our preferred model is that shown in column (2).

In Table 3, we now estimate the determinants of perceived tax fraud in Spain as a whole. Our results show there to be no differences between regimes with respect to this variable. As suggested in Section 3.1, this is expected, as any difference would mainly be due to differences in level of knowledge, which a priori should be independent of the respondents' region of residence. As for the control variables, *ceteris paribus*, left-wing individuals and those in favour of more political autonomy for their region perceive

[20] See, for example, Alm and Torgler (2006).

more fraud; highly educated, inactive individuals and the self-employed perceive less fraud. Again, ideology (*Left*) and *Self-employed* matter the most. Given the potential role of knowledge in explaining perceptions, any differential impact due to ideology or demands for more political autonomy for the region of residence must be driven by some kind of political bias.

In contrast, *foral* residents perceive less fraud in their AC of residence than is perceived by residents elsewhere (almost -0.3, and statistically significant at the 99% level). This result (see Table 4) holds across the three specifications shown, and the impact is quite large: in absolute terms, it is almost twofold the impact of *Left*, whose estimate is positive. Also, *ceteris paribus*, inactive and self-employed individuals have a differential perception regarding tax fraud in their AC, with both presenting a negative sign.

One possible explanation for the lower perception of fraud among residents in regions under the *foral* regime is that they perceive a higher level of tax enforcement within their territory. This hypothesis is tested in Table 5. While the sign of the estimate of *Foral* is positive, it is statistically insignificant across all specifications and presents a relatively small absolute value. In fact, only the estimates of *Self-employed*, *Pro Autonomy* and *Inactive* are statistically significant. Thus, in the *foral* regime the perception of a lower rate of tax fraud among its citizens does not seem to be caused by a higher perceived level of the effort being carried out by the tax administration in their region of residence.

All in all, when considering the differences in decentralisation between the common regime (partially decentralised) and the *foral* regime (fully decentralised), our empirical results suggest that a fully decentralised tax system offers no obvious advantages in terms of compliance. Neither the level of tax morale nor the perceived effectiveness of tax enforcement – two factors that in theory should drive higher levels of compliance – is significantly higher in the *foral* system. Had they been found to be significant, then decentralisation could have been considered a superior institutional arrangement: i.e. tax morale encourages voluntary compliance, while the perceived level of enforcement incentivizes compliance through a deterrence effect. Here, the null impact on tax morale is not unexpected given that in a similar study we previously identified a surprising lack

of a greater level of knowledge about tax decentralisation among the residents of the *foral* regime (Durán-Cabré *et al.*, 2024). If the residents are unaware they pay all their taxes to the regional government, then full decentralisation is unlikely to have any impact on tax morale. Thus, our present result is very much in line with the residents' lack of knowledge about decentralisation and, more importantly, perhaps, it highlights the need to provide the populace with information about the advantages of decentralisation. Yet, the absence of a higher perception of effort on the part of the tax administration fails to explain the lower rate of tax fraud perceived by *foral* residents in their region. We return to this apparent contradiction in Section 4.3.

A number of general results regarding the impact of the covariates are worth stressing. The intrinsic predisposition to comply with tax laws is higher among left-wing and relatively older individuals. This would appear to be a matter of preferences. While the impact of *Older* is no longer significant with respect to the rest of the margins, left-wing individuals perceive higher rates of fraud both in Spain as a whole and in their region of residence. As long as we cannot reasonably expect them to be better informed, *ceteris paribus*, than the rest of society, there seems to be a political bias here. *Self-employed* individuals – who present a lower level of predisposition to comply with the tax law (Table 2) – constitute an interesting group for further analysis, as they often seem to fall under the radar of the tax administration, as both their income and spending are more difficult to monitor.[21] Hence, it could be argued that they are better informed than the rest of individuals about the level of fraud and about the tax enforcement efforts of the administration. Given their supposedly more realistic perceptions, *ceteris paribus*, the self-employed perceive less fraud and a higher level of tax enforcement. Again, this outcome probably points to a certain bias in their responses. Finally, the fact that those who would like a higher level of political autonomy for their region present a lower level of *Tax Morale* might be a way for them to express their discontent with the prevailing political status-quo. This is not good news for (voluntary) tax compliance.

[21] Employees' incomes are easily monitored through third-party information provided by employers and, in any case, very few categories of expenditure are deductible. In contrast, self-employment incomes are not usually subject to third-party information and the number of deductible expenditures is a lot higher.

*4.2. Robustness Tests*

In this section, we present a set of robustness tests that confirm our basic results. First, in Table 6, according to the nature of our endogenous variables (i.e. outcomes of either 1 or 0 for *Tax Morale*, and outcomes that range from 1 to 4 for the rest), we show the results for non-linear models using poststratification weighting to address the sample bias identified in the previous section. Our results regarding *Foral* remain unchanged as do those of the covariates.

In Table 7, we return once more to our linear model estimations. The first four columns show the results for each endogenous variable when including fixed effects by AC. In a similar vein to the potential impact of territorial size or to that of GDP p.c. discussed above, there may be unobservable factors correlated to *Foral* that if left uncontrolled might bias our estimates. We now include fixed effects for those regions whose statistical representativeness was guaranteed when designing the survey sample (i.e. the Canary Islands, Catalonia and the AC of Madrid). Although we cannot reject the statistical insignificance of all the fixed effects for each estimation, the basic results remain the same. The last four columns show the results when we construct a dummy *Fake Foral* variable which is equal to 1 for the *Foral* regions' neighbours (i.e. Cantabria, La Rioja, Asturias and Galicia). In all the regressions, the estimated impact of this *Fake Foral* variable is very small in absolute terms and is always statistically insignificant.

Finally, we ran a non-parametric matching method using coarsened exact matching (CEM). After pre-processing our data with CEM, we applied both an LPM using OLS and non-linear estimation methods. Again, the basic results (shown in Table 8) remain unchanged.

*4.3. Why, after all, might the perception of tax fraud be lower in the foral regime?*

As discussed in the Introduction and in Section 2, the *foral* regime provides its citizens with a level of public resources per capita that is well above the average for Spain. This is due to a combination of their high fiscal capacity and the low level of regional redistribution to which the *foral* regime commits itself to compared to the rest of the

regions. Could this circumstance have an impact on the margins related here to compliance? This higher level of public resources and, hence, the better provision of public goods, could enhance trust and with it boost tax morale. Moreover, citizens with a high level of public good provision – combined with good performance – may well assign less importance to the problem of tax fraud in their territory. Do these hypotheses hold in the institutional setting we analyse here? Our answer to this question is shown in Table 9.

To test hypotheses of this type, for each dependent variable we control for a dummy variable that is equal to 1 in the case of those regions with a level of public resources per inhabitant above the average. These regions are the following: Cantabria, La Rioja, Extremadura, Canary Islands, Castilla y León, Asturias, Aragón and the *foral* regime. By including this variable, we seek to disentangle the impact of the institutional idiosyncrasy of the *foral* regime being tested (greater tax autonomy) from the financial results of the regional financing system (*High resources*). No statistically significant results emerge from this new variable, with the exception of the perceived level of fraud in the *foral* regime. This is the case independently of whether we control for the GDP index (which does not necessarily correlate with the results of the financing system) or the surface area index (results are shown in the last four columns of Table 9).

Clearly, the *High resources* variable is a confounder in the case of perceived levels of tax fraud in the AC. Of the almost -0.3 impact of *Foral* on the perceived level of fraud found when not controlling for this variable, around one-third (an estimate of -0.1, which is also statistically significant) is due to the high level of resources in the *foral* regime.[22] The rest can be attributed to the *foral* regime itself, independently of the good financial results of its residents. We leave a more rigorous analysis of this outcome for future research, but, for the time being, we would like to stress that this result does not seem to be driven by higher perceived efforts of the administration to reduce tax fraud in the *foral* system.

[22] Curiously, this greater level of public resources and the corresponding greater satisfaction with the quality of regional government (see fn. 3) does not impact tax morale. This might mean that it is easier to mould perceptions (in our case, of tax fraud) than preferences (in our case, toward tax morale).

## 5. Conclusions

Tax morale and enforcement are recognised drivers of tax compliance. Here, we have tested whether decentralisation impacts these two drivers and, consequently, whether it affects tax compliance. We take advantage of the Spanish context, where, within the same country, we find two substantially different institutional arrangements of tax decentralisation: a partially decentralised, common regional financing system, and the fully decentralised, *foral* regime operated in the Basque Country and Navarre. We draw on data from a unique survey that can be considered representative of both the national level and of the *foral* regions.

Our results show that, *ceteris paribus*, the average citizen under the *foral* regime, in spite of being resident in a fully decentralised region, does not show a higher level of tax morale than that shown by the average resident under the common regime. Nor do we find any differences between citizen perceptions of the level of tax enforcement under the two regimes. Likely, there are no differences in the perceived level of tax fraud in the whole country, but there are significant differences regarding the perceived tax fraud in the region: residents in the fully decentralised regime perceiving less tax fraud in their AC.

The *foral* regions enjoy per capita disposable revenues that are significantly above the national average, their average GDP is higher and they do not contribute to the interregional redistribution that is implemented in the common regime. As a result of this, *foral* residents may well perceive less tax fraud in their ACs, given what is generally the higher quality of the public services they enjoy in comparison with those of regions with fewer resources. However, on testing this hypothesis, we find that only around one-third of the lower perceptions of tax fraud in their region can be attributed to the higher resource level, while the rest seems to be attributable directly to the *foral* regime itself. This only partially explained result needs to be the focus of future research.

The potential impact of fiscal decentralisation on tax compliance is a key consideration

for countries in which decentralisation is on the political agenda. In Spain, in 2024, the central government announced the reform of the common financing system during the current year (i.e. 2025). This is a long-awaited reform and will involve the redesign of the decentralised tax system. Based on our findings here – which should be of relevance for other countries with the caveat of 'external validity' – tax decentralisation does not seem to promote tax compliance: it has neither a carrot effect and generates a higher level of tax morale, nor a stick effect and fosters a greater deterrence effect.

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**Table 1.** Descriptive Statistics

| Variable | Obs. | Mean | Std. Dev. | Min | Max | Mean from real data |
|---|---|---|---|---|---|---|
| **Full Sample** | | | | | | |
| Tax Morale | 3,017 | 0.8114 | 0.3913 | 0.0000 | 1.0000 | Non applicable |
| Fraud perceived in the whole of Spain | 3,017 | 3.5177 | 0.6248 | 1.0000 | 4.0000 | Non applicable |
| Fraud perceived in the AC of residence | 3,017 | 3.2324 | 0.7192 | 1.0000 | 4.0000 | Non applicable |
| Level of tax enforcement | 3,017 | 1.9470 | 0.7538 | 1.0000 | 4.0000 | Non applicable |
| Left | 3,017 | 0.4859 | 0.4999 | 0.0000 | 1.0000 | 0.4347 |
| Centre | 3,017 | 0.1700 | 0.3757 | 0.0000 | 1.0000 | 0.2610 |
| Right | 3,017 | 0.2251 | 0.4177 | 0.0000 | 1.0000 | 0.3042 |
| Older | 3,017 | 0.5018 | 0.5001 | 0.0000 | 1.0000 | 0.5317 |
| High Edu | 3,017 | 0.5164 | 0.4998 | 0.0000 | 1.0000 | 0.3166 |
| High Income | 3,017 | 0.3102 | 0.4627 | 0.0000 | 1.0000 | 0.4128 |
| Inactive | 3,017 | 0.3016 | 0.4590 | 0.0000 | 1.0000 | 0.3422 |
| Married | 3,017 | 0.5800 | 0.4936 | 0.0000 | 1.0000 | 0.5055 |
| Female | 3,017 | 0.5118 | 0.4999 | 0.0000 | 1.0000 | 0.5095 |
| Having kids | 3,017 | 0.5466 | 0.4979 | 0.0000 | 1.0000 | 0.6062 |
| Self-employed | 3,017 | 0.0563 | 0.2306 | 0.0000 | 1.0000 | 0.0655 |
| Pro Autonomy | 3,017 | 0.3712 | 0.4832 | 0.0000 | 1.0000 | Non applicable |
| *Foral* | 3,017 | 0.2672 | 0.4425 | 0.0000 | 1.0000 | Non applicable |
| GDP index | 3,017 | 0.7629 | 0.1604 | 0.5460 | 1.0000 | Non applicable |
| Surface area index | 3,017 | 0.2853 | 0.2966 | 0.0530 | 1.0000 | Non applicable |
| **Subsample: *Foral* Regime** | | | | | | |
| Tax Morale | 806 | 0.8462 | 0.3610 | 0.0000 | 1.0000 | Non applicable |
| Fraud perceived in the whole of Spain | 806 | 3.5335 | 0.5755 | 1.0000 | 4.0000 | Non applicable |
| Fraud perceived in the AC of residence | 806 | 3.0496 | 0.7223 | 1.0000 | 4.0000 | Non applicable |
| Level of tax enforcement | 806 | 1.9380 | 0.7127 | 1.0000 | 4.0000 | Non applicable |
| Left | 806 | 0.5596 | 0.4967 | 0.0000 | 1.0000 | 0.6010 |
| Centre | 806 | 0.1588 | 0.3657 | 0.0000 | 1.0000 | 0.2067 |
| Right | 806 | 0.1315 | 0.3382 | 0.0000 | 1.0000 | 0.1827 |
| Older | 806 | 0.5012 | 0.5003 | 0.0000 | 1.0000 | 0.5699 |
| High Edu | 806 | 0.5447 | 0.4983 | 0.0000 | 1.0000 | 0.3525 |
| High Income | 806 | 0.3623 | 0.4810 | 0.0000 | 1.0000 | 0.5032 |
| Inactive | 806 | 0.1476 | 0.3550 | 0.0000 | 1.0000 | 0.3543 |
| Married | 806 | 0.6303 | 0.4830 | 0.0000 | 1.0000 | 0.4903 |
| Female | 806 | 0.5906 | 0.4920 | 0.0000 | 1.0000 | 0.5117 |
| Having kids | 806 | 0.5459 | 0.4982 | 0.0000 | 1.0000 | 0.5790 |
| Self-employed | 806 | 0.0608 | 0.2391 | 0.0000 | 1.0000 | 0.0587 |
| Pro Autonomy | 806 | 0.4789 | 0.4999 | 0.0000 | 1.0000 | Non applicable |
| GDP index | 806 | 0.9017 | 0.0242 | 0.8774 | 0.9257 | Non applicable |
| Surface area index | 806 | 0.0934 | 0.0168 | 0.0767 | 0.1103 | Non applicable |

| Subsample: Common Regime | | | | | | |
|---|---|---|---|---|---|---|
| Tax Morale | 2,211 | 0.7987 | 0.4010 | 0 | 1 | Non applicable |
| Fraud perceived in the whole of Spain | 2,211 | 3.5120 | 0.6418 | 1 | 4 | Non applicable |
| Fraud perceived in the AC of residence | 2,211 | 3.2990 | 0.7066 | 1 | 4 | Non applicable |
| Level of tax enforcement | 2,211 | 1.9503 | 0.7683 | 1 | 4 | Non applicable |
| Left | 2,211 | 0.4591 | 0.4984 | 0 | 1 | 0.4239 |
| Centre | 2,211 | 0.1741 | 0.3793 | 0 | 1 | 0.2646 |
| Right | 2,211 | 0.2592 | 0.4383 | 0 | 1 | 0.3121 |
| Older | 2,211 | 0.5020 | 0.5001 | 0 | 1 | 0.5292 |
| High Edu | 2,211 | 0.5061 | 0.5001 | 0 | 1 | 0.4067 |
| High Income | 2,211 | 0.2913 | 0.4545 | 0 | 1 | 0.4068 |
| Inactive | 2,211 | 0.3578 | 0.4794 | 0 | 1 | 0.3414 |
| Married | 2,211 | 0.5617 | 0.4963 | 0 | 1 | 0.5065 |
| Female | 2,211 | 0.4830 | 0.4998 | 0 | 1 | 0.5094 |
| Having kids | 2,211 | 0.5468 | 0.4979 | 0 | 1 | 0.6079 |
| Self-employed | 2,211 | 0.0547 | 0.2275 | 0 | 1 | 0.0660 |
| Pro Autonomy | 2,211 | 0.3320 | 0.4710 | 0 | 1 | Non applicable |
| GDP index | 2,211 | 0.7212 | 0.1690 | 0.546 | 1 | Non applicable |
| Surface area index | 2,211 | 0.3491 | 0.3237 | 0.053 | 1 | Non applicable |

**Table 2**: Determinants of Tax Morale: Common vs *foral* regime

| | (1) OLS | (2) OLS Weighted Regression | (3) OLS Weighted Regression |
|---|---|---|---|
| *Foral* Regime | 0.0281* | 0.0025 | 0.00534 |
| | (0.0161) | (0.0199) | (0.0227) |
| GDP index | | | -0.00579 |
| | | | (0.0585) |
| Surface area index | | | 0.00690 |
| | | | (0.0295) |
| Left | 0.128*** | 0.140*** | 0.141*** |
| | (0.0249) | (0.0289) | (0.0289) |
| Centre | 0.0201 | 0.0374 | 0.0375 |
| | (0.0293) | (0.0335) | (0.0335) |
| Right | -0.0196 | 0.00744 | 0.00762 |
| | (0.0288) | (0.0323) | (0.0324) |
| Older | 0.0510*** | 0.0698*** | 0.0701*** |
| | (0.0166) | (0.0192) | (0.0192) |
| High Edu | -0.0126 | -0.0105 | -0.0103 |
| | (0.0146) | (0.0160) | (0.0160) |
| High Income | 0.0106 | 0.0142 | 0.0146 |
| | (0.0158) | (0.0180) | (0.0181) |
| Inactive | -0.0327** | -0.0466** | -0.0463** |
| | (0.0166) | (0.0189) | (0.0193) |
| Married | 0.0328* | 0.0345* | 0.0343* |
| | (0.0175) | (0.0194) | (0.0194) |
| Female | 0.00541 | 0.0157 | 0.0155 |
| | (0.0148) | (0.0169) | (0.0169) |
| Having kids | -0.000999 | -0.00927 | -0.00939 |
| | (0.0178) | (0.0196) | (0.0196) |
| Self-employed | -0.155*** | -0.154*** | -0.154*** |
| | (0.0372) | (0.0386) | (0.0386) |
| Pro Autonomy | -0.0324** | -0.0313* | -0.0314* |
| | (0.0151) | (0.0172) | (0.0172) |
| Constant | 0.730*** | 0.707*** | 0.709*** |
| | (0.0291) | (0.0325) | (0.0547) |
| Observations | 3,017 | 3,017 | 3,017 |
| R-squared | 0.045 | 0.043 | 0.043 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

**Table 3**: Determinants of perceived tax fraud in Spain: Common vs *foral* regime

| | (1) OLS | (2) OLS Weighted Regression | (3) OLS Weighted Regression |
|---|---|---|---|
| *Foral* Regime | -0.0316 | -0.0365 | -0.0150 |
| | (0.0255) | (0.0295) | (0.0339) |
| GDP index | | | -0.103 |
| | | | (0.0895) |
| Surface area index | | | 0.00999 |
| | | | (0.0476) |
| Left | 0.155*** | 0.194*** | 0.196*** |
| | (0.0405) | (0.0474) | (0.0475) |
| Centre | 0.0461 | 0.0880* | 0.0891* |
| | (0.0466) | (0.0534) | (0.0534) |
| Right | -0.0951** | -0.0494 | -0.0469 |
| | (0.0463) | (0.0525) | (0.0525) |
| Older | -0.00919 | -0.00317 | -0.000433 |
| | (0.0262) | (0.0276) | (0.0276) |
| High Edu | -0.0836*** | -0.0736*** | -0.0724*** |
| | (0.0234) | (0.0248) | (0.0248) |
| High Income | 0.0381 | 0.0117 | 0.0161 |
| | (0.0251) | (0.0282) | (0.0283) |
| Inactive | -0.0697*** | -0.0855*** | -0.0802*** |
| | (0.0268) | (0.0285) | (0.0291) |
| Married | 0.0116 | 0.0155 | 0.0134 |
| | (0.0270) | (0.0297) | (0.0296) |
| Female | 0.0187 | 0.00856 | 0.00893 |
| | (0.0235) | (0.0251) | (0.0251) |
| Having kids | -0.0135 | -0.00570 | -0.00627 |
| | (0.0282) | (0.0304) | (0.0304) |
| Self-employed | -0.138** | -0.131** | -0.133** |
| | (0.0543) | (0.0600) | (0.0599) |
| Pro Autonomy | 0.0685*** | 0.0661** | 0.0670** |
| | (0.0238) | (0.0260) | (0.0261) |
| Constant | 3.495*** | 3.464*** | 3.529*** |
| | (0.0455) | (0.0512) | (0.0862) |
| Observations | 3.017 | 3.017 | 3.017 |
| R-squared | 0.042 | 0.040 | 0.041 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

**Table 4**: Determinants of perceived tax fraud in the AC: Common vs *foral* regime

| | (1) OLS | (2) OLS Weighted Regression | (3) OLS Weighted Regression |
|---|---|---|---|
| *Foral* Regime | -0.290*** | -0.292*** | -0.296*** |
| | (0.0307) | (0.0365) | (0.0415) |
| GDP index | | | 0.134 |
| | | | (0.102) |
| Surface area index | | | 0.0784 |
| | | | (0.0521) |
| Left | 0.158*** | 0.189*** | 0.189*** |
| | (0.0471) | (0.0519) | (0.0520) |
| Centre | 0.103** | 0.129** | 0.129** |
| | (0.0524) | (0.0572) | (0.0573) |
| Right | -0.0564 | -0.0128 | -0.0154 |
| | (0.0518) | (0.0568) | (0.0569) |
| Older | 0.0350 | 0.0326 | 0.0307 |
| | (0.0308) | (0.0341) | (0.0342) |
| High Edu | -0.0343 | -0.0301 | -0.0304 |
| | (0.0268) | (0.0283) | (0.0283) |
| High Income | 0.0328 | 0.0158 | 0.0113 |
| | (0.0291) | (0.0335) | (0.0337) |
| Inactive | -0.149*** | -0.168*** | -0.175*** |
| | (0.0303) | (0.0335) | (0.0341) |
| Married | 0.00818 | 0.0118 | 0.0125 |
| | (0.0316) | (0.0356) | (0.0356) |
| Female | -0.0215 | -0.0244 | -0.0273 |
| | (0.0270) | (0.0299) | (0.0299) |
| Having kids | 0.0405 | 0.0780** | 0.0774** |
| | (0.0339) | (0.0376) | (0.0376) |
| Self-employed | -0.140** | -0.116* | -0.113* |
| | (0.0588) | (0.0641) | (0.0641) |
| Pro Autonomy | -0.0693** | -0.0631** | -0.0652** |
| | (0.0278) | (0.0310) | (0.0311) |
| Constant | 3.281*** | 3.238*** | 3.121*** |
| | (0.0527) | (0.0575) | (0.0958) |
| Observations | 3.017 | 3.017 | 3.017 |
| R-squared | 0.049 | 0.056 | 0.057 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

**Table 5**: Determinants of perceived tax enforcement: Common vs *foral* regime

| | (1) OLS | (2) OLS Weighted Regression | (3) OLS Weighted Regression |
|---|---|---|---|
| *Foral* Regime | 0.0241 | 0.0514 | 0.0401 |
| | (0.0314) | (0.0360) | (0.0407) |
| GDP index | | | -0.0234 |
| | | | (0.107) |
| Surface area index | | | -0.0603 |
| | | | (0.0586) |
| Left | 0.00844 | -0.00684 | -0.00821 |
| | (0.0462) | (0.0529) | (0.0530) |
| Centre | -0.00663 | -0.0285 | -0.0292 |
| | (0.0544) | (0.0601) | (0.0602) |
| Right | 0.101* | 0.0665 | 0.0666 |
| | (0.0528) | (0.0588) | (0.0590) |
| Older | 0.0547* | 0.0535 | 0.0531 |
| | (0.0326) | (0.0351) | (0.0351) |
| High Edu | 0.0440 | 0.0429 | 0.0423 |
| | (0.0285) | (0.0303) | (0.0302) |
| High Income | -0.0579* | -0.0427 | -0.0425 |
| | (0.0298) | (0.0322) | (0.0324) |
| Inactive | 0.0566* | 0.0639* | 0.0652* |
| | (0.0323) | (0.0342) | (0.0348) |
| Married | -0.0141 | -0.0281 | -0.0272 |
| | (0.0356) | (0.0387) | (0.0387) |
| Female | -0.00161 | -0.00783 | -0.00605 |
| | (0.0291) | (0.0318) | (0.0320) |
| Having kids | 0.0422 | 0.0598 | 0.0606 |
| | (0.0372) | (0.0405) | (0.0404) |
| Self-employed | 0.180*** | 0.160** | 0.159** |
| | (0.0664) | (0.0710) | (0.0709) |
| Pro Autonomy | -0.0683** | -0.0679** | -0.0671** |
| | (0.0292) | (0.0321) | (0.0321) |
| Constant | 1.867*** | 1.882*** | 1.919*** |
| | (0.0535) | (0.0590) | (0.101) |
| Observations | 3.017 | 3.017 | 3.017 |
| R-squared | 0.014 | 0.014 | 0.014 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

**Table 6:** Robustness test: Non-linear Binary Response Models

| | *Tax Morale* | *Perceived Tax Fraud in Spain* | *Perceived Tax Fraud in the AC* | *Perceived Tax Enforcement* |
|---|---|---|---|---|
| | Weighted Probit | Weighted Ordered Probit | Weighted Ordered Probit | Weighted Ordered Probit |
| *Foral* Regime | 0.0109 | -0.0843 | -0.456*** | 0.0807 |
| | (0.0752) | (0.0572) | (0.0544) | (0.0520) |
| Left | 0.507*** | 0.349*** | 0.283*** | 0.00195 |
| | (0.0959) | (0.0834) | (0.0774) | (0.0765) |
| Centre | 0.113 | 0.142 | 0.188** | -0.0431 |
| | (0.105) | (0.0945) | (0.0864) | (0.0877) |
| Right | 0.00922 | -0.108 | -0.0366 | 0.0952 |
| | (0.0998) | (0.0899) | (0.0845) | (0.0849) |
| Older | 0.269*** | -0.00787 | 0.0550 | 0.0856* |
| | (0.0712) | (0.0549) | (0.0539) | (0.0510) |
| High Edu | -0.0368 | -0.144*** | -0.0581 | 0.0583 |
| | (0.0587) | (0.0476) | (0.0443) | (0.0439) |
| High Income | 0.0610 | 0.0122 | 0.0269 | -0.0471 |
| | (0.0686) | (0.0547) | (0.0524) | (0.0471) |
| Inactive | -0.170** | -0.161*** | -0.261*** | 0.0926* |
| | (0.0688) | (0.0540) | (0.0512) | (0.0494) |
| Married | 0.130* | 0.0478 | 0.0273 | -0.0430 |
| | (0.0712) | (0.0585) | (0.0558) | (0.0562) |
| Female | 0.0517 | 0.0187 | -0.0391 | -0.0121 |
| | (0.0619) | (0.0493) | (0.0467) | (0.0461) |
| Having kids | -0.0414 | -0.0238 | 0.105* | 0.0806 |
| | (0.0743) | (0.0614) | (0.0593) | (0.0589) |
| Self-employed | -0.511*** | -0.229** | -0.177* | 0.219** |
| | (0.113) | (0.104) | (0.0985) | (0.0991) |
| Pro Autonomy | -0.111* | 0.142*** | -0.103** | -0.104** |
| | (0.0634) | (0.0519) | (0.0483) | (0.0467) |
| Constant | 0.542*** | | | |
| | (0.105) | | | |
| Observations | 3,017 | 3,017 | 3,017 | 3,017 |
| (Pseudo) R-squared | 0.0424 | 0.0235 | 0.0269 | 0.0061 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

**Table 7:** Robustness Tests: Inclusion of AC-fixed effects and Fake *Foral*

| | *Tax Morale* | *Perceived Tax Fraud in Spain* | *Perceived Tax Fraud in the AC* | *Perceived Tax Enforc.* | *Tax Morale* | *Perceived Tax Fraud in Spain* | *Perceived Tax Fraud in the AC* | *Perceived Tax Enforc.* |
|---|---|---|---|---|---|---|---|---|
| | **AC-Fixed Effects** | | | | **Fake Foral** | | | |
| *Foral* Regime | 0.00149 | -0.0574* | -0.289*** | 0.0604 | | | | |
| | (0.0224) | (0.0339) | (0.0406) | (0.0415) | | | | |
| Fake *Foral* | | | | | -0.00698 | -0.0308 | -0.0879 | 0.0109 |
| | | | | | (0.0332) | (0.0550) | (0.0631) | (0.0607) |
| Left | 0.141*** | 0.196*** | 0.186*** | -0.00619 | 0.140*** | 0.195*** | 0.202*** | -0.00900 |
| | (0.0289) | (0.0475) | (0.0521) | (0.0530) | (0.0289) | (0.0475) | (0.0522) | (0.0532) |
| Centre | 0.0378 | 0.0894* | 0.128** | -0.0277 | 0.0373 | 0.0909* | 0.151*** | -0.0323 |
| | (0.0335) | (0.0534) | (0.0573) | (0.0602) | (0.0336) | (0.0535) | (0.0579) | (0.0604) |
| Right | 0.00747 | -0.0481 | -0.0173 | 0.0668 | 0.00708 | -0.0432 | 0.0355 | 0.0580 |
| | (0.0323) | (0.0525) | (0.0569) | (0.0590) | (0.0324) | (0.0525) | (0.0567) | (0.0590) |
| Older | 0.0705*** | -0.000387 | 0.0297 | 0.0547 | 0.0700*** | -0.00663 | 0.00613 | 0.0582* |
| | (0.0192) | (0.0277) | (0.0343) | (0.0351) | (0.0190) | (0.0274) | (0.0351) | (0.0352) |
| High Edu | -0.0101 | -0.0726*** | -0.0312 | 0.0435 | -0.0106 | -0.0718*** | -0.0155 | 0.0403 |
| | (0.0160) | (0.0248) | (0.0283) | (0.0303) | (0.0161) | (0.0248) | (0.0290) | (0.0304) |
| High Income | 0.0151 | 0.0156 | 0.00968 | -0.0412 | 0.0143 | 0.00947 | 0.000147 | -0.0400 |
| | (0.0181) | (0.0284) | (0.0337) | (0.0324) | (0.0179) | (0.0281) | (0.0341) | (0.0323) |
| Inactive | -0.0444** | -0.0816*** | -0.177*** | 0.0700** | -0.0466** | -0.0852*** | -0.166*** | 0.0635* |
| | (0.0193) | (0.0290) | (0.0342) | (0.0348) | (0.0189) | (0.0285) | (0.0341) | (0.0341) |
| Married | 0.0348* | 0.0131 | 0.0127 | -0.0259 | 0.0347* | 0.0130 | -0.00824 | -0.0246 |
| | (0.0194) | (0.0297) | (0.0357) | (0.0388) | (0.0193) | (0.0295) | (0.0364) | (0.0386) |
| Female | 0.0160 | 0.00784 | -0.0267 | -0.00588 | 0.0158 | 0.00823 | -0.0290 | -0.00695 |
| | (0.0169) | (0.0250) | (0.0299) | (0.0320) | (0.0168) | (0.0250) | (0.0305) | (0.0319) |
| Having kids | -0.00899 | -0.00571 | 0.0788** | 0.0605 | -0.00948 | -0.00445 | 0.0902** | 0.0576 |
| | (0.0197) | (0.0304) | (0.0376) | (0.0405) | (0.0197) | (0.0303) | (0.0388) | (0.0405) |
| Self-employed | -0.154*** | -0.134** | -0.115* | 0.162** | -0.154*** | -0.129** | -0.103 | 0.158** |
| | (0.0386) | (0.0601) | (0.0641) | (0.0710) | (0.0386) | (0.0597) | (0.0651) | (0.0710) |
| Pro Autonomy | -0.0277 | 0.0712** | -0.0642* | -0.0596* | -0.0311* | 0.0633** | -0.0863*** | -0.0638** |
| | (0.0183) | (0.0281) | (0.0333) | (0.0341) | (0.0170) | (0.0256) | (0.0313) | (0.0319) |
| CAT | 0.00149 | -0.0574* | -0.289*** | 0.0604 | | | | |
| | (0.0224) | (0.0339) | (0.0406) | (0.0415) | | | | |
| MAD | -0.0165 | -0.0494 | 0.0243 | -0.0255 | | | | |
| | (0.0264) | (0.0429) | (0.0476) | (0.0503) | | | | |
| CAN | 0.00525 | -0.0437 | 0.0406 | 0.0340 | | | | |
| | (0.0246) | (0.0377) | (0.0434) | (0.0452) | | | | |
| Constant | 0.704*** | 3.478*** | 3.244*** | 1.862*** | 0.708*** | 3.457*** | 3.169*** | 1.894*** |
| | (0.0341) | (0.0535) | (0.0598) | (0.0619) | (0.0328) | (0.0510) | (0.0576) | (0.0590) |
| Observations | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 |
| R-squared | 0.043 | 0.041 | 0.057 | 0.015 | 0.043 | 0.040 | 0.027 | 0.013 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

**Table 8:** Robustness Test: Coarsened Exact Matching (CEM)

| | (1) *Tax Morale* OLS | (2) *Perceived Tax Fraud in Spain* OLS | (3) *Perceived Tax Fraud in the AC* OLS | (4) *Perceived Tax Enforc.* OLS | (5) *Tax Morale* Probit | (6) *Perceived Tax Fraud in Spain* Ord. Probit | (7) *Perceived Tax Fraud in the AC* Ord. Probit | (8) *Perceived Tax Enforc.* Ord. Probit |
|---|---|---|---|---|---|---|---|---|
| *Foral* Regime | 0.0217 | 0.000133 | -0.267*** | -0.00302 | 0.0937 | -0.00835 | -0.435*** | 0.00446 |
| | (0.0182) | (0.0316) | (0.0370) | (0.0462) | (0.0808) | (0.0654) | (0.0597) | (0.0663) |
| Left | 0.105*** | 0.125** | 0.117* | 0.0871 | 0.441*** | 0.248** | 0.179* | 0.142 |
| | (0.0318) | (0.0522) | (0.0620) | (0.0626) | (0.120) | (0.102) | (0.0980) | (0.0963) |
| Centre | 0.0239 | 0.0660 | 0.114 | 0.0151 | 0.0741 | 0.125 | 0.170 | 0.0225 |
| | (0.0390) | (0.0620) | (0.0702) | (0.0726) | (0.139) | (0.120) | (0.113) | (0.112) |
| Right | -0.0671* | -0.0958 | -0.130* | 0.113 | -0.250* | -0.168 | -0.216* | 0.172 |
| | (0.0403) | (0.0657) | (0.0775) | (0.0781) | (0.135) | (0.120) | (0.120) | (0.118) |
| Older | 0.0576*** | -0.0201 | -0.00538 | 0.132** | 0.265*** | -0.0334 | -0.00160 | 0.190** |
| | (0.0223) | (0.0439) | (0.0466) | (0.0649) | (0.100) | (0.0914) | (0.0787) | (0.0883) |
| High Edu | -0.00596 | -0.0997*** | -0.0322 | 0.0573 | -0.0267 | -0.203** | -0.0601 | 0.0796 |
| | (0.0211) | (0.0382) | (0.0403) | (0.0507) | (0.0915) | (0.0793) | (0.0671) | (0.0725) |
| High Income | 0.0354 | 0.0553 | 0.0964** | -0.0147 | 0.180 | 0.0992 | 0.160** | -0.0196 |
| | (0.0230) | (0.0427) | (0.0449) | (0.0658) | (0.110) | (0.0911) | (0.0769) | (0.0943) |
| Inactive | -0.0518** | -0.0212 | -0.101** | 0.0243 | -0.203** | -0.0503 | -0.167** | 0.0434 |
| | (0.0245) | (0.0421) | (0.0467) | (0.0515) | (0.0967) | (0.0854) | (0.0742) | (0.0764) |
| Married | 0.0296 | -0.00166 | 0.0545 | 0.00532 | 0.119 | 0.0240 | 0.103 | 0.00501 |
| | (0.0282) | (0.0420) | (0.0495) | (0.0572) | (0.118) | (0.0864) | (0.0820) | (0.0865) |
| Female | 0.0111 | 0.0162 | -0.0255 | 0.00286 | 0.0477 | 0.0416 | -0.0401 | -0.00232 |
| | (0.0206) | (0.0376) | (0.0395) | (0.0574) | (0.0904) | (0.0787) | (0.0663) | (0.0812) |
| Having kids | 0.0234 | -0.0114 | -0.0110 | -0.00416 | 0.0973 | -0.0360 | -0.0375 | -0.00721 |
| | (0.0277) | (0.0484) | (0.0542) | (0.0581) | (0.122) | (0.101) | (0.0910) | (0.0882) |
| Self-employed | -0.134* | -0.0951 | -0.0248 | -0.0480 | -0.540** | -0.199 | -0.0452 | -0.0588 |
| | (0.0783) | (0.0865) | (0.0960) | (0.122) | (0.247) | (0.166) | (0.160) | (0.180) |
| Pro Autonomy | -0.0200 | 0.0804** | -0.0469 | -0.0743 | -0.0790 | 0.166** | -0.0859 | -0.122 |
| | (0.0200) | (0.0351) | (0.0399) | (0.0529) | (0.0896) | (0.0750) | (0.0671) | (0.0775) |
| Constant | 0.725*** | 3.479*** | 3.264*** | 1.800*** | 0.547*** | | | |
| | (0.0418) | (0.0658) | (0.0765) | (0.105) | (0.153) | | | |
| Observations | 2,169 | 2,169 | 2,169 | 2,169 | 2,169 | 2,169 | 2,169 | 2,169 |
| (Pseudo)R-squared | 0.049 | 0.037 | 0.054 | 0.014 | 0.0560 | 0.0217 | 0.0270 | 0.0065 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

The matching method is performed using the command CEM in STATA. The sample contains fewer than 3,017 observations because of the process of matching (i.e., there are 848 unmatched observations). The above regressions are weighted to equalize the number of treated and control units within each stratum.

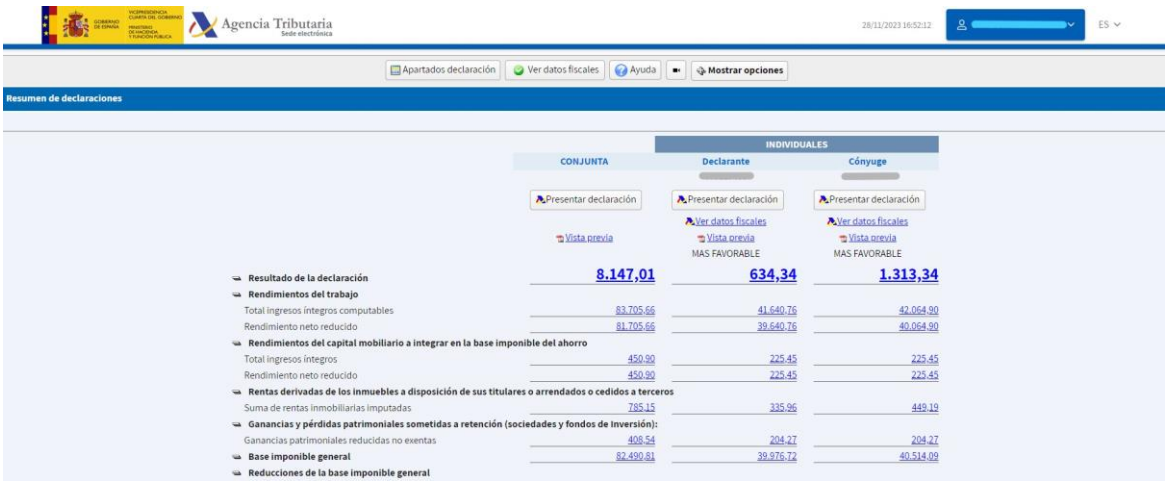
**Table 9:** The impact of the regional financing system on Compliance

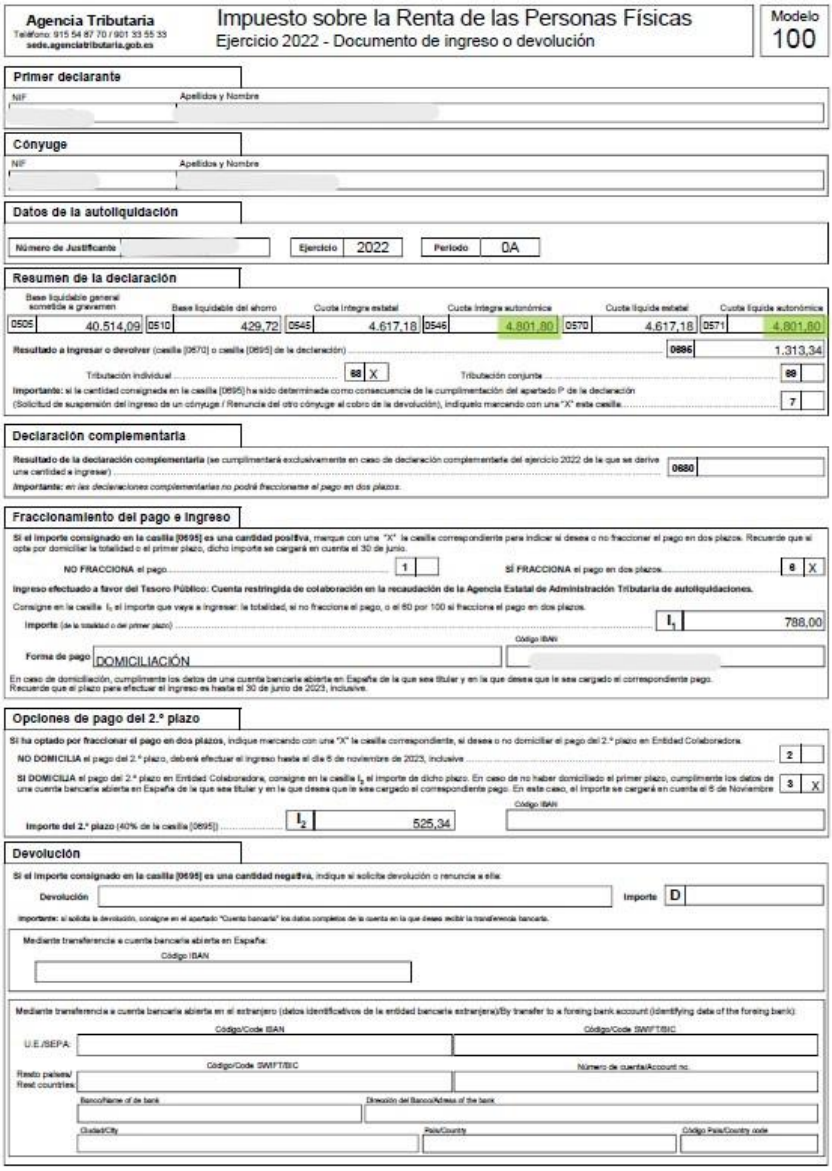
| | *Tax Morale* | *Perceived Tax Fraud in Spain* | *Perceived Tax Fraud in the AC* | *Perceived Tax Enforc.* | *Tax Morale* | *Perceived Tax Fraud in Spain* | *Perceived Tax Fraud in the AC* | *Perceived Tax Enforc.* |
|---|---|---|---|---|---|---|---|---|
| *Foral* Regime | -0.00804 | -0.0259 | -0.220*** | 0.0234 | -0.0132 | 0.0200 | -0.209*** | 0.00656 |
| | (0.0243) | (0.0371) | (0.0439) | (0.0448) | (0.0304) | (0.0476) | (0.0545) | (0.0572) |
| High resources | 0.0149 | -0.0150 | -0.103*** | 0.0397 | 0.0220 | -0.0417 | -0.104** | 0.0399 |
| | (0.0198) | (0.0312) | (0.0345) | (0.0376) | (0.0236) | (0.0383) | (0.0410) | (0.0469) |
| GDP index | | | | | 0.0286 | -0.169 | -0.0289 | 0.0390 |
| | | | | | (0.0687) | (0.108) | (0.119) | (0.132) |
| Surface area index | | | | | 0.0197 | -0.0144 | 0.0176 | -0.0370 |
| | | | | | (0.0320) | (0.0526) | (0.0563) | (0.0652) |
| Left | 0.141*** | 0.193*** | 0.183*** | -0.00434 | 0.142*** | 0.194*** | 0.184*** | -0.00627 |
| | (0.0290) | (0.0474) | (0.0518) | (0.0530) | (0.0290) | (0.0475) | (0.0519) | (0.0531) |
| Centre | 0.0381 | 0.0873 | 0.124** | -0.0267 | 0.0385 | 0.0874 | 0.125** | -0.0276 |
| | (0.0335) | (0.0533) | (0.0571) | (0.0601) | (0.0336) | (0.0533) | (0.0571) | (0.0602) |
| Right | 0.00832 | -0.0503 | -0.0188 | 0.0688 | 0.00820 | -0.0480 | -0.0182 | 0.0677 |
| | (0.0323) | (0.0524) | (0.0567) | (0.0589) | (0.0323) | (0.0525) | (0.0568) | (0.0590) |
| Older | 0.0700*** | -0.0033 | 0.0316 | 0.0540 | 0.0697*** | 0.000328 | 0.0326 | 0.0524 |
| | (0.0192) | (0.0276) | (0.0341) | (0.0351) | (0.0192) | (0.0276) | (0.0342) | (0.0350) |
| High Edu | -0.0102 | -0.074*** | -0.0318 | 0.0435 | -0.0101 | -0.073*** | -0.0313 | 0.0427 |
| | (0.0160) | (0.0248) | (0.0282) | (0.0303) | (0.0160) | (0.0247) | (0.0282) | (0.0302) |
| High Income | 0.0151 | 0.0109 | 0.00982 | -0.0404 | 0.0146 | 0.0160 | 0.0111 | -0.0425 |
| | (0.0180) | (0.0283) | (0.0335) | (0.0322) | (0.0181) | (0.0283) | (0.0336) | (0.0324) |
| Inactive | -0.0453** | -0.087*** | -0.177*** | 0.0674** | -0.0461** | -0.081*** | -0.176*** | 0.0654* |
| | (0.0190) | (0.0286) | (0.0336) | (0.0341) | (0.0193) | (0.0291) | (0.0341) | (0.0348) |
| Married | 0.0348* | 0.0152 | 0.0100 | -0.0274 | 0.0350* | 0.0120 | 0.00908 | -0.0259 |
| | (0.0194) | (0.0297) | (0.0355) | (0.0387) | (0.0194) | (0.0295) | (0.0355) | (0.0387) |
| Female | 0.0161 | 0.00812 | -0.0274 | -0.00667 | 0.0156 | 0.00877 | -0.0277 | -0.00590 |
| | (0.0169) | (0.0250) | (0.0299) | (0.0319) | (0.0169) | (0.0250) | (0.0299) | (0.0320) |
| Having kids | -0.00955 | -0.00542 | 0.0799** | 0.0591 | -0.00985 | -0.00540 | 0.0795** | 0.0598 |
| | (0.0197) | (0.0304) | (0.0376) | (0.0405) | (0.0196) | (0.0304) | (0.0376) | (0.0404) |
| Self-employed | -0.154*** | -0.131** | -0.117* | 0.160** | -0.153*** | -0.134** | -0.118* | 0.161** |
| | (0.0386) | (0.0600) | (0.0638) | (0.0711) | (0.0386) | (0.0600) | (0.0640) | (0.0709) |
| Pro Autonomy | -0.0309* | 0.0656** | -0.0663** | -0.0667** | -0.0311* | 0.0666** | -0.0662** | -0.0668** |
| | (0.0172) | (0.0261) | (0.0311) | (0.0321) | (0.0172) | (0.0261) | (0.0311) | (0.0321) |
| Constant | 0.701*** | 3.471*** | 3.282*** | 1.865*** | 0.672*** | 3.599*** | 3.296*** | 1.852*** |
| | (0.0337) | (0.0519) | (0.0585) | (0.0606) | (0.0672) | (0.106) | (0.115) | (0.128) |
| Observations | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 | 3,017 |
| R-squared | 0.043 | 0.041 | 0.059 | 0.014 | 0.043 | 0.042 | 0.059 | 0.014 |

Robust standard errors in parentheses. *** p<0.01. ** p<0.05. * p<0.1.

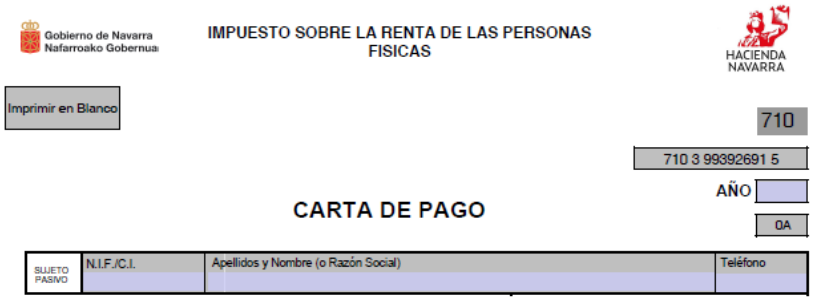
## Appendix I

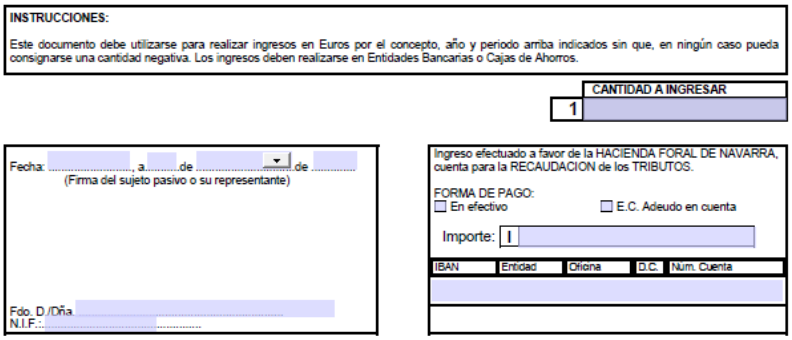
Picture A1. PIT assistance program and tax returns in the common regime



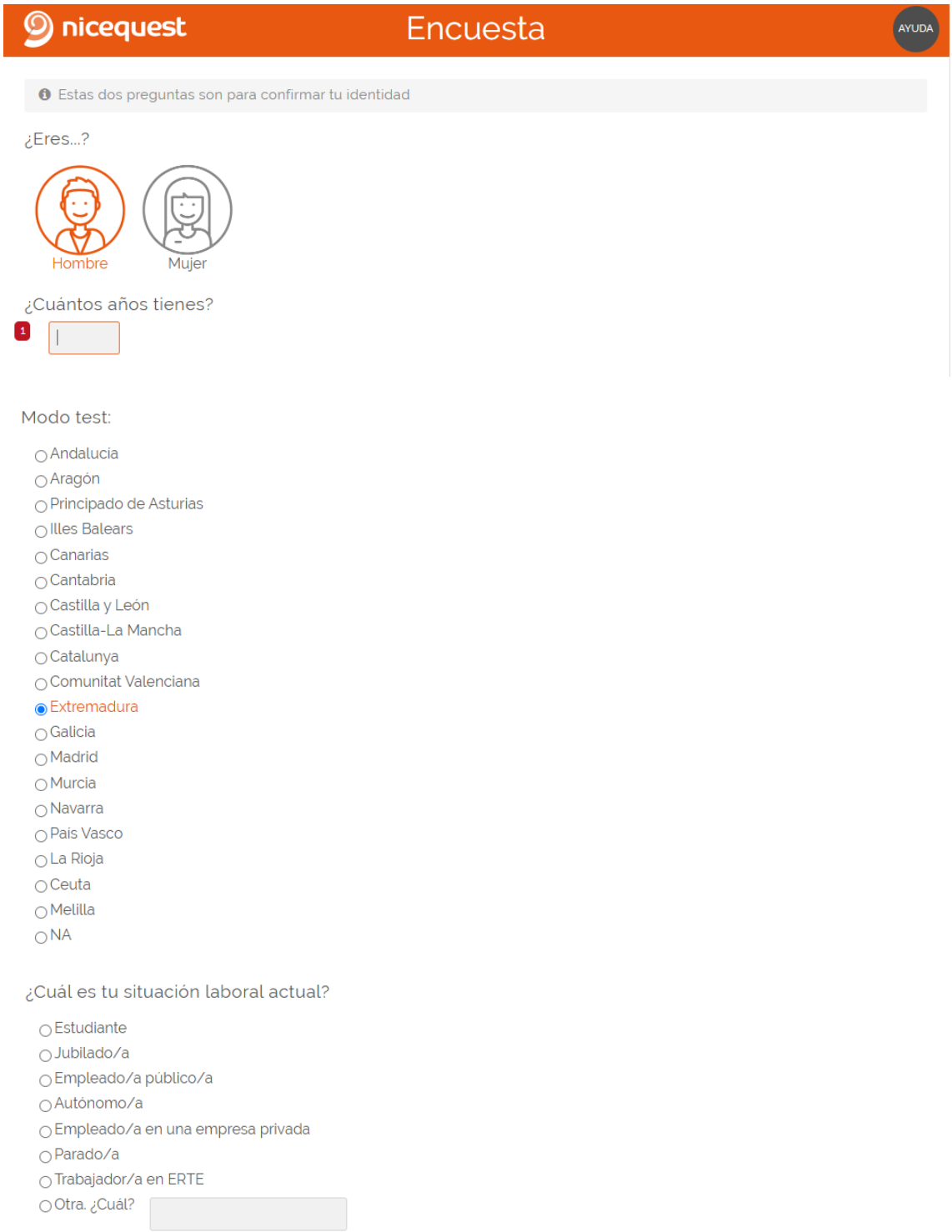



Picture A2. PIT assistance program and tax returns in the *foral* regime (Navarre)

## Appendix II


nicequest
Encuesta
AYUDA
Estas dos preguntas son para confirmar tu identidad
¿Eres...?
Hombre
Mujer
¿Cuántos años tienes?
1
Modo test:
Andalucia
Aragón
Principado de Asturias
Illes Balears
Canarias
Cantabria
Castilla y León
Castilla-La Mancha
Catalunya
Comunitat Valenciana
Extremadura
Galicia
Madrid
Murcia
Navarra
Pais Vasco
La Rioja
Ceuta
Melilla
NA
¿Cuál es tu situación laboral actual?
Estudiante
Jubilado/a
Empleado/a público/a
Autónomo/a
Empleado/a en una empresa privada
Parado/a
Trabajador/a en ERTE
Otra. ¿Cuál?

Actualmente, en el momento de contestar esta encuesta, entre todos los miembros del hogar, (incluida la persona encuestada) y por todos los conceptos, ¿de cuántos ingresos esperas disponer por término medio en tu hogar este mes, después de la deducción de impuestos (o sea, ingresos netos)?

- ○ Sin ingresos de ningún tipo
- ○ Menos o igual a 300 €
- ○ De 301 a 600 €
- ○ De 601 a 900 €
- ○ De 901 a 1.200 €
- ○ De 1.201 a 1.800 €
- ○ De 1.801 a 2.400 €
- ○ De 2.401 a 3.000 €
- ○ De 3.001 a 4.500 €
- ○ De 4.501 a 6.000 €
- ○ Más de 6.000 €
- ○ No lo sé

¿Vives en una vivienda de alquiler?

- ○ Sí
- ○ No

¿Eres propietario/a de una segunda residencia?

- ○ Sí
- ○ No

Cuando se habla de política se utilizan normalmente las expresiones izquierda y derecha. ¿Cómo te definirías ideológicamente?

| Izquierda 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Derecha 10 |
|---|---|---|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

- ○ Prefiero no contestar

En relación con la organización territorial de España, ¿cuál de las siguientes opciones definiría mejor tus preferencias políticas?:

- ○ Me parece bien la organización territorial actual
- ○ Desearía más autonomía para mi comunidad autónoma
- ○ Desearía menos autonomía para mi comunidad autónoma
- ○ Desearía la independencia de mi comunidad autónoma

¿A qué gobierno crees que se pagan los siguientes impuestos?:

| | Al Gobierno central en su totalidad | A la comunidad autónoma en su totalidad | Una parte al Gobierno central y otra a la comunidad autónoma | Al Ayuntamiento en su totalidad | Lo desconozco |
|---|---|---|---|---|---|
| IRPF (impuesto sobre la renta de las personas físicas) | ○ | ○ | ○ | ○ | ○ |
| IVA (impuesto sobre el valor añadido) | ○ | ○ | ○ | ○ | ○ |
| Impuesto de sociedades | ○ | ○ | ○ | ○ | ○ |
| IBI (impuesto sobre bienes inmuebles) | ○ | ○ | ○ | ○ | ○ |
| Impuesto de patrimonio | ○ | ○ | ○ | ○ | ○ |
| Impuesto de sucesiones y donaciones | ○ | ○ | ○ | ○ | ○ |
| Impuesto de transmisiones patrimoniales (ITP) | ○ | ○ | ○ | ○ | ○ |
| Impuestos sobre el alcohol, la gasolina y el tabaco | ○ | ○ | ○ | ○ | ○ |
| Impuesto de vehículos de tracción mecánica (circulación) | ○ | ○ | ○ | ○ | ○ |

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el IRPF. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el IVA a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el IBI. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el IBI a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el Impuesto sobre sucesiones. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el impuesto de sucesiones a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

Esta pregunta nos permitirá saber si estás prestando atención y comprobar que tus respuestas se están guardando correctamente.

Selecciona en qué año estamos actualmente:

- ○ 2023
- ○ 2024
- ○ 2025
- ○ 2026
- ○ 2027

En la pregunta sobre a qué gobierno crees que se pagan los siguientes impuestos, te has equivocado en la respuesta porque el IRPF se paga una parte al Gobierno central y otra a la comunidad autónoma. Teniendo en cuesta información, te volvemos a preguntar:

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el IRPF. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el IRPF a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

En la pregunta sobre a qué gobierno crees que se pagan los siguientes impuestos te has equivocado en la respuesta porque el IVA se paga una parte al Gobierno central y otra a la comunidad autónoma. Teniendo en cuesta información, te volvemos a preguntar:

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el IVA. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el IVA a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

En la pregunta sobre a qué gobierno crees que se pagan los siguientes impuestos te has equivocado en la respuesta porque el Impuesto sobre sucesiones se paga en su totalidad a la comunidad autónoma. Teniendo en cuesta información, te volvemos a preguntar:

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el Impuesto sobre sucesiones. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el impuesto de sucesiones a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

En la pregunta sobre a qué gobierno crees que se pagan los siguientes impuestos te has equivocado en la respuesta porque el IBI se paga en su totalidad al Ayuntamiento. Teniendo en cuesta información, te volvemos a preguntar:

Supón que el sector público se está planteando aumentar el gasto público para lo cual considera necesario incrementar únicamente el IBI. ¿Estarías de acuerdo con esta medida?

- ○ Sí
- ○ No

¿Cuánto más estarías dispuesto/a pagar en el IBI a cambio del aumento en el gasto público?

- ○ Hasta un 5% de mi renta anual
- ○ Entre un 6-10% de mi renta anual
- ○ Más del 10% de mi renta anual

En tu opinión, ¿crees que en España existe mucho, bastante, poco o muy poco fraude fiscal?

- ○ Existe mucho fraude fiscal
- ○ Existe bastante fraude fiscal
- ○ Existe poco fraude fiscal
- ○ Existe muy poco fraude fiscal

¿Y en tu Comunidad Autónoma en particular?

- ○ Existe mucho fraude fiscal
- ○ Existe bastante fraude fiscal
- ○ Existe poco fraude fiscal
- ○ Existe muy poco fraude fiscal

¿Crees que, en la actualidad, la Administración hace mucho, bastante, poco o muy poco esfuerzo para luchar contra el fraude fiscal?

- ○ Mucho
- ○ Bastante
- ○ Poco
- ○ Muy poco

¿Cuál es tu opinión en relación con el fraude fiscal?

- ○ Nunca puede estar justificado
- ○ Siempre está justificado
- ○ En ocasiones puede estar justificado

¿Percibes que hay diferencias en los impuestos que se pagan en España dependiendo de la Comunidad Autónoma de residencia?

- ○ Sí
- ○ No

¿Cómo consideras que son esas diferencias?

- ○ Considero que tales diferencias son positivas para nuestra democracia
- ○ Considero que tales diferencias son negativas para nuestra democracia
- ○ Considero que no tienen por qué afectar ni positiva ni negativamente

Por último, ¿qué te ha parecido la encuesta? Selecciona de 1 a 5 estrellas para indicar si te ha parecido que la encuesta estaba muy mal hecha (1) o muy bien hecha (5)

☆ ☆ ☆ ☆ ☆

**2021**

**2021/01, Rusteholz, G.; Mediavilla, M.; Pires, L.:** "Impact of bullying on academic performance. A case study for the community of Madrid"
**2021/02, Amuedo-Dorantes, C.; Rivera-Garrido, N.; Vall Castelló, J.:** "Reforming the provision of cross-border medical care evidence from Spain"
**2021/03, Domínguez, M.:** "Sweeping up gangs: The effects of tough-on-crime policies from a network approach"
**2021/04, Arenas, A.; Calsamiglia, C.; Loviglio, A.:** "What is at stake without high-stakes exams? Students' evaluation and admission to college at the time of COVID-19"
**2021/05, Armijos Bravo, G.; Vall Castelló, J.:** "Terrorist attacks, Islamophobia and newborns'health"
**2021/06, Asensio, J.; Matas, A.:** "The impact of 'competition for the market'regulatory designs on intercity bus prices"
**2021/07, Boffa, F.; Cavalcanti, F.; Piolatto, A.:** "Ignorance is bliss: voter education and alignment in distributive politics"

**2022**

**2022/01, Montolio, D.; Piolatto, A.; Salvadori, L.:** "Financing public education when altruistic agents have retirement concerns"
**2022/02, Jofre-Monseny, J.; Martínez-Mazza, R.; Segú, M.:** "Effectiveness and supply effects of high-coverage rent control policies"
**2022/03, Arenas, A.; Gortazar, L.:** "Learning loss one year after school closures: evidence from the Basque Country"
**2022/04, Tassinari, F.:** "Low emission zones and traffic congestion: evidence from Madrid Central"
**2022/05, Cervini-Plá, M.; Tomàs, M.; Vázquez-Grenno, J.:** "Public transportation, fare policies and tax salience"
**2022/06, Fernández-Baldor Laporta, P.:** "The short-term impact of the minimum wage on employment: Evidence from Spain"
**2022/07, Foremny, D.; Sorribas-Navarro, P.; Vall Castelló, J.:** "Income insecurity and mental health in pandemic times"
**2022/08, Garcia-López, M.A.; Viladecans-Marsal, E.:** "The role of historic amenities in shaping cities"
**2022/09, Cheshire, P. C., Hilber, C. A. L., Montebruno, P., Sanchis-Guarner, R.:** "(IN)convenient stores? What do policies pushing stores to town centres actually do?"
**2022/10, Sanchis-Guarner, R.:** "Decomposing the impact of immigration on house prices"

**2023**

**2023/01, Garrouste, M., Lafourcade, M.:** "Place-based policies: Opportunity for deprived schools or zone-and-shame effect?"
**2023/02, Durán-Cabré, J.M., Esteller-Moré A., Rizzo L., Secomandi, R.:** "Fiscal Knowledge and its Impact on Revealed MWTP in COVID times: Evidence from Survey Data"
**2023/03, Esteller-Moré A., Galmarini U.:** "Optimal tax administration responses to fake mobility and underreporting"
**2023/04, Armijos Bravo, G., Vall Castelló, J.:** "Job competition in civil servant public examinations and sick leave behavior"
**2023/05, Buitrago-Mora, D., Garcia-López, M.A.:** "Real estate prices and land use regulations: Evidence from the law of heights in Bogotá"
**2023/06, Rodriguez-Planas, N., Secor, A.:** "College Students' Social Capital and their Perceptions of Local and National Cohesion"
**2023/07, Obaco, M., Davi-Arderius D., Pontarollo, N.:** "Spillover Effects and Regional Determinants in the Ecuadorian Clean-Cooking Program: A Spatiotemporal Econometric Analysis"
**2023/08, Durán-Cabré, J.M., Esteller-Moré, A., Rizzo, L., Secomandi, R.:** "Has Covid Vaccination Success Increased our Marginal Willingness to Pay Taxes?"
**2023/09, Borrella-Mas, M.A., Millán-Quijano, J., Terskaya, A.:** "How do Labels and Vouchers Shape Unconditional Cash Transfers? Experimental Evidence from Georgia"
**2023/10, Messina, J., Sanz-de-Galdeano, A., Terskaya, A.**: "Birds of a Feather Earn Together. Gender and Peer Effects at the Workplace"
**2023/12, Rodríguez-Planas, N., Secor, A., De Balanzó Joue, R.:** "Resilience-thinking Training for College Students: Evidence from a Randomized Trial"
**2023/13, Arenas, A., Calsamiglia, C.:** "Gender differences in high-stakes performance and college admission policies"

**2024**

**2024/01, Wald, G., Cohen, F., Kahn, V.:** "Making Jobs out of the Energy Transition: Evidence from the French Energy Efficiency Obligations Scheme"
**2024/02, Durán-Cabré, J. M., Esteller-Moré, A., Montolio, D., Vázquez-Grenno, J.:** "Can Teachers Influence Student Perceptions and Preferences? Experimental Evidence from a Taxation Course"
**2024/03, Brutti, Z., Montolio, D.:** "Muddying the Waters: How Grade Distributions Change when University Exams Go Online"
**2024/04, Durán-Cabré, J. M., Esteller-Moré, A., Salvadori, L.:** "Discovering Tax Decentralization: Does it Impact Marginal Willingness to Pay Taxes?"

**2024/05, Muñoz-Sobrado, E., Piolatto, A., Zerbini, A., Braccioli, F.:** "The Taxing Challenges of the State: Unveiling the Role of Fiscal & Administrative Capacity in Development"
**2024/06, Bellés-Obrero, C., Rice, C. T., Zerbini, A., Vall Castelló, J.:** "It where it hurts: Healthcare access and intimate partner violence"
**2024/07, Bellés-Obrero, C., Jiménez-Martín, S., Ye, H.:** "The Effect of Removing Early Retirement on Mortality"
**2024/08, Magre-Pont, J., Magontier, P., Solé-Ollé, A.:** "Political Parties and Public Policies. A review of the Spanish evidence"
**2024/09, Bergvall, S., Rodríguez-Planas, N.:** "Motherhood and Domestic Violence: A Longitudinal Study Using Population-Wide Administrative Data"
**2024/10, Magontier, P., Solé-Ollé, A., Viladecans-Marsal, E.:** "The Political Economy of Coastal Development"
**2024/11, Sanchis-Guarner, R., Szumilo, N., Vernet, A.:** "Startup stations: the impact of rail access on entrepreneurship (self-employment) in England and Wales"
**2024/12, Rodríguez-Planas. N, Secor, A., De Balanzó Joue, R.:** "Resilience-thinking training for college students: Evidence from a randomized trial"
**2024/13, Rodríguez-Planas. N, Secor, A.:** "Gender, perceived discrimination and the overruling of Roe V. Wade"
**2024/14, Ouasbaa, G.:** "A Country of Waiters: The Economic Consequences of Tourism Specialization"
**2024/15, Garcia-López, M.A., Gómez-Hernández, L.Y., Sanchis-Guarner, R.:** "Highway Traffic in Britain: The Effect of Road Capacity Changes"
**2024/16, Bellés-Obrero, C., La Mattina, G., Ye, H.:** "Social Pensions and Intimate Partner Violence against Older Women"
**2024/17, Adsera, A., Arenas, A., Boix, C.:** "The value of public health"

**2025**

**2025/01, Estruch-Garcia, C., Solé-Ollé, A., Tassinari, F., Viladecans-Marsal, E.:** "The Electoral Effects of Banning Cars from the Streets: Evidence from Barcelona's Superblocks"

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