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Voters' influence on local tax policy

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ABSTRACT

In a well-functioning democracy, citizens can influence public policy through voting. By voting prospectively, voters may aim to select politicians that make policies in line with their preferences, and, by voting retrospectively, they may reward or punish politicians for their performance. To what extent voters actually influence policy is unclear, especially in local government, where many impediments to policy responsiveness may exist. Moreover, voters may realize that their influence on public policy is negligible and vote expressively instead of instrumentally. We investigate a key area in public policy, tax policy, using panel data on municipalities in the Netherlands in the period 1998–2021. We find that changes in the political color of the municipal council on average do not lead to changes in tax levels or tax distribution. However, incumbents that lower taxes fare better at the polls than incumbents that moderately increase taxes. Interestingly, strong tax increases do not lead to more severe electoral punishment, and punishment does not seem to differ between left-wing and right-wing incumbents. Our results suggest that expressive voting plays an important role. People may vote left-wing and express their identity as charitable persons, and then punish incumbents who actually raise taxes.

1. Introduction

The trade-off between taxes and government services is among the most fundamental in public policy. Higher taxes enable more government services, while lower public service levels allow lower taxes. Ideally, voters should be able to influence this trade-off, ensuring that public service levels and the corresponding tax burden are congruent with their preferences (Sabl, 2015). Decentralization is often motivated by arguing that it improves welfare by allowing this tradeoff to differ among jurisdictions (Oates, 1972).

Traditionally, left-wing politicians are associated with higher taxes and more public services, and right-wing politicians with the opposite (Downs, 1957). A related question that often follows the same political divide is how the tax burden should be allocated among different groups of taxpayers. Left-wing politicians are seen as favoring progressive taxes (i.e., taxing the rich more than the poor) more than right-wing politicians do (Folke, 2014; Pettersson-Lidbom, 2008; Blom-Hansen et al., 2006).

We analyze two possible channels through which voters' preferences may be translated into tax policy. The first channel is prospective or forward-looking voting (Elinder et al., 2015). We distinguish between two types of prospective voting, namely expressive and instrumental voting. With instrumental prospective voting, elections become an instrument for democratic selection (Downs, 1957), where citizens vote for candidates they expect to change (tax) policy according to their wishes. Their expectations may, e.g., be based on party manifestos or ideological heuristics. This in contrast to expressive voters, who realize that a single vote has little

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influence, and do not vote primarily with the aim to influence public policy. Rather, they vote to do what they find morally just or to express their identity (Tullock, 1971).

A second channel through which voters may influence policy is retrospective voting. Instrumental retrospective voting may hold politicians accountable for their in-office performance (Ferejohn 1986; Elinder et al., 2015; Rienks, 2023). In what is essentially a principal-agent problem, this incentivizes incumbents to keep their electorate's wishes firmly in mind and discourages them from reneging on electoral promises. Citizens do not need detailed knowledge (Erikson et al., 1993) for this. Simple, highly visible performance indicators may suffice (Fiorina 1981; Salmon 1987). One such indicator could be the tax burden.

Ideally, prospective and retrospective instrumental voting should operate in tandem to bring about policy responsiveness. Through prospective instrumental voting, voters select politicians expected to implement policies in line with their preferences, and retrospective instrumental voting gives politicians an incentive to fulfill such expectations. However, the relationship between prospective and retrospective voting and their impact on public policy can be much more complex. For instance, people may recognize that their vote will probably not influence the outcome of an election and vote expressively (Hillman, 2010; Hamlin and Jennings, 2011). If the candidates they voted for end up in government and actually implement the policies they promised, voters may update their beliefs about the degree to which their votes matter, and switch to being instrumental voters, possibly punishing the incumbents because they did what they had promised. Politicians aware of such dynamics may be reluctant to implement significant policy changes.

This paper investigates tax policies in local governments in the Netherlands in the period 1998–2021. To study prospective voting, we test whether changes in voting behavior, as reflected in the composition of the municipal council through proportional representation, predict changes in local taxes. We are interested in whether such ideological changes affect tax levels, or the distribution of the tax burden among different groups of taxpayers. Only a handful of papers estimate this in systems using proportional representation, despite this being the most commonly used electoral system in the world (Bormann and Golder, 2013). Focusing on the Netherlands also allows us to employ novel ideology scales to categorize political parties (Laméris et al., 2018). This enables us to rise above the traditional left-right divide, and consider preferences for economic equality and for markets and efficiency as well.

To study retrospective voting, we test whether changes in tax levels are followed by corresponding changes in the electoral success of incumbents, and whether this differs between left-wing and right-wing incumbents. Some papers have studied both prospective and retrospective voting on the national level (Elinder et al., 2015; Lanoue, 1994) but this is, as far as we are aware, the first paper to test both simultaneously at the local level.

Ex-ante, we expect Dutch tax policy to be responsive, because these elections are free, fair and competitive, and the electoral system is based on proportional representation (Wlezien and Soroka, 2021; Coppedge et al., 2019; Rienks, 2022). The small scale of municipalities (relative to states or countries) should also contribute to policy responsiveness (Dahl, 1994; Wlezien and Soroka, 2021). Furthermore, the Dutch municipal funding system is designed to enable local governments to set local tax rates in accordance with the preferences of their constituencies. Equalizing grants provided by the central government aim to allow municipalities to offer equivalent levels of government services at similar tax rates. Local taxes are meant to enable municipalities to cater to the specific needs and preferences of their constituencies (Tweede Kamer, 1996). A recent survey of local voters in the Netherlands confirms that supporters of left-wing parties say they prefer higher taxes and social expenditures, while supporters of right-wing parties say the opposite (see) Appendix B.

Local taxes do appear to be a salient policy issue. Unlike withholding taxes, they are highly visible. They have direct financial consequences for voters and can thus lead to 'pocketbook voting' aimed at maximizing their own material wellbeing (Elinder et al., 2015). Local taxes are also fundamental to public policy. Municipal rankings on local taxes feature regularly in the media, and local tax bills are generally sent just weeks before local elections. Still, local taxation yields only a relatively small (average) share of total municipality revenue in the Netherlands, which may enable local politicians to leave tax policy unchanged. However, this share varies considerably among municipalities due to the equalizing grant allocation system. This allows us to investigate whether responsiveness is greater when local taxes are more important, something that has not been done before.

Our analysis of prospective voting finds that changes in the composition of municipal councils do not lead to substantive changes in local tax levels or local tax distribution, even in municipalities where local taxation is an important part of the funding mix. However, in our analysis of retrospective voting, we find that incumbents that lower taxes fare better at the polls than incumbents who moderately increase taxes. Interestingly, strong tax increases do not lead to more severe electoral punishment. Also, the effect of tax increases on electoral success does not seem to differ between left-wing and right-wing incumbents.

Voters punishing incumbents who raised taxes may be understood in the context of a principal-agent model, where voters try to prevent politicians from taking rent. However, such models have less to say about prospective voting. They do not explain the existence of ideological differences between parties, or of voters who tell pollsters they would approve of tax increases. The theory of expressive voting may help understand what we find. We interpret our results as a coexistence of expressive prospective voting by a part of the electorate on the one hand, and instrumental retrospective voting to discipline politicians on the other. Apparently, many left-wing voters do not actually want taxes increased but vote expressively, e.g., to express their identity as charitable persons. Many left-wing politicians seem to be aware of this because, on average, taxes do not go up after they gain seats. If taxes are increased moderately, by either left-wing or right-wing parties, voters update their expectations and realize that their vote may have consequences, and discipline incumbents by voting for the opposition. Strong tax increases may be condoned by voters because they are often the result of financial stress and may be considered inevitable, not ideologically motivated.

2. Literature

We are interested in the influence of voters on tax policy. More precisely, we ask whether voters can change tax policy by changing the ideological composition of local government. If that is the case, citizens can trade off taxes and government services by the use of their vote.

It is important to distinguish our research question from the related but very different question concerning the effects of party control on policy, regardless of voter preferences. Empirical studies in the latter school (e.g., Pettersson-Lidbom, 2008; Folke, 2014; Fiva et al., 2017; and many American studies reviewed by Potrafke, 2018) typically use regression discontinuity designs to control for differences in voter preferences. Such studies aim to compare jurisdictions that only differ in party composition. We are not interested in parties as such, but rather in whether the aggregated policy preferences of a constituency matter.

2.1. Institutional and economic reasons why local voting outcomes may not matter much for public policy

Several schools of thought suggest that election results do not matter much for (subnational) governments' fiscal policy. One position is that socio-economic and institutional factors are far more important (e.g., Lewis-Beck, 1977). Also, voters may use local elections as second-order elections to punish parties that joined the national government. Moreover, decisions made by higher government tiers might dominate those made by subnational governments. These factors might have gained traction because of globalization and European integration. According to the incrementalist school, government budgets follow simple autoregressive rules, e.g., last year's budget plus x percent (Davis et al., 1966).

The theory of tax competition (Wilson, 1986), building on Tiebout (1956), points out that citizens can express discontent not only through voting, but also by moving to other jurisdictions. This exit option is also available to firms. It may restrain politicians who consider tax increases, for fear of losing part of their tax base. Local governments are more susceptible to this than national governments, because mobility is greater within countries than among countries. Especially the wealthy could decide to move, since they are both mobile and pay higher taxes. This limits the scope for tax progressiveness. Perfect Tiebout sorting would make politics redundant because every citizen would end up living in a jurisdiction that provides exactly the desired combination of public goods and taxes.

The median voter theory predicts that politicians compete for the favor of the median voter, which eliminates most of the policy differences between them (Downs, 1957; Romer and Rosenthal, 1979). The empirical evidence for the median voter theorem in elections with proportional representation is not strong.

2.2. Instrumental voting

The literature proposes different motives for voting (Hamlin and Jennings, 2011; Meya et al., 2020). First, voters may vote with the aim to affect public policy. This is called instrumental voting. Instrumental voting may be aimed at improving one's own material wellbeing, e.g., voting for more (less) income redistribution if one's income is low (high). This is sometimes described as pocketbook voting. However, instrumental voting may also be driven by social preferences. Voters may have altruistic or paternalistic feelings towards others, and, e.g., see a fair income distribution as a public good. Pocketbook voting and voting driven by social preferences may coexist, but this could lead to tensions. E.g., instrumental voters who would lose part of their income if the government started redistributing could be torn between their social preferences and their pocketbooks.

It is not clear whether instrumental voting is predominantly retrospective or prospective. Prospective instrumental voting is forward looking and founded on expectations based on, e.g., promises in party manifestos. Retrospective instrumental voting, on the other hand, looks back and holds incumbents accountable for their performance.

In the case of retrospective instrumental voting, it might be difficult for voters to judge the trade-off between taxes and public services. Since public service levels are difficult to quantify, voters may resort to simple indicators (Fiorina 1981) such as tax levels. This gives politicians an incentive to avoid tax increases.

Right-wing voters might be especially likely to punish tax increases, given their preferences (Tillman and Park, 2009). However, the theoretical reason that is most common in the literature for why tax increases are punished is the existence of a principal-agent problem where voters try to discipline politicians to avoid discouraging rent taking (e.g., Besley and Case, 1995; Allers, 2012). Such models do not distinguish between different ideological stances. In such a context, it might even be easier for right-wing politicians to raise taxes because voters, knowing that this goes against what these politicians publicly stand for, will more readily believe that such tax increases are truly necessary (e.g., Cukierman and Tommasi, 1998).

Retrospective instrumental voting to discipline politicians is a rather blunt instrument. Often, politicians are held accountable for events beyond their control, e.g., rising unemployment following an international crisis. The theory of political yardstick competition holds that retrospective voting is more effective in local elections than in national elections, because voters may, e.g., compare local tax rates with those of neighboring municipalities facing similar economic and social challenges (Salmon, 1987). Local politicians might anticipate this, and try to improve their electoral success by avoiding tax rates that deviate too much from those in neighboring municipalities. Allers and Elhorst (2005) find empirical support for yardstick competition in the Netherlands.

Even if voters consider both taxes and public service levels, changing tax rates may be electorally costly (Blom-Hansen et al., 2006). Both increasing taxes and reducing government services are unpopular. Due to loss aversion (Kahneman and Tversky, 1979), the electorate may not appreciate the corresponding increase in service levels or decrease in taxes enough to make for a net positive effect (Allers et al., 2022).

2.3. Expressive voting

Voting may also be driven by non-instrumental motives, i.e., not aimed at affecting public policies. In most elections, the probability of one's vote being decisive is effectively zero. As a result, the benefits of instrumental voting are lower than the costs of voting in terms of time and effort. This paradox of voting seems to rule out instrumental voting (Downs, 1957; Sobel and Wagner, 2004). Since many people do vote, scholars had to postulate other (not instrumental) motives for voting: the utility derived from the act of voting itself, and from voting according to what they feel is just or in line with their identity and convictions, whether it affects policy outcomes or not. The decision to vote may, e.g., follow from the wish to be considered (by others and by oneself) a responsible citizen. This can be seen as an example of expressive behavior that, through acts and declarations, confirms one's identity (Hillman, 2010) or reflects moral views or social pressures (Hamlin and Jennings, 2011).

Believing that their vote makes no difference, expressive voters can easily vote against their own pocketbooks (Tullock, 1971; Brennan and Lomasky, 1993). This in contrast to instrumental voters. Expressive voting is not limited to left-wing voters. Indeed, Stark (2015) suggests that the limited support for income redistribution among American voters may be explained by the desire, also among low-income voters, to identify as entrepreneurial, self-reliant, and disdainful of government largesse.

2.4. Economic model of expressive and instrumental voting

Pure cases of either instrumental or expressive voting are rare (Hamlin and Jennings, 2011). Most vote choices will involve both instrumental and expressive considerations. Abstracting from decreasing marginal utilities, we propose this simple model:

$$U_i = V_i + E_i + p_{1i}p_{2i}B_i \tag{1}$$

where U_i is the utility citizen i derives from voting; V_i is the expressive utility of turning out to vote; E_i is the additional expressive utility of voting for a certain candidate (politician or party); B_i is the (positive or negative) utility to voter i of the policy associated with the selected candidate if implemented; p_{1i} is the probability that this candidate, given the chance, would actually implement this policy, and p_{2i} is the probability of one's vote being decisive.

Equation (1) describes a one-dimensional issue space, e.g., more or less income redistribution. Generalizing it to an n-dimensional issue space is straightforward. The benefit B_i includes both pocketbook benefits and benefits following from social preferences being realized.

Equation (1) combines instrumental and expressive motives to vote. If U_i exceeds the cost of voting, one votes. p_{1i} and p_{2i} are expectations. If someone believes their vote makes little or no difference, p_{2i} is low, and expressive motives dominate. After the elections, expectations may be updated, depending on the outcome. Thus, after having voted expressively for a candidate supporting tax increases and finding that they are now in a position to carry out their promises and actually increase taxes, one may update one's belief about the probability that one's vote matters; p_{2i} increases. If this increase is sufficiently large, one becomes an instrumental voter. As a result, left-wing incumbents that raised taxes may lose votes.

The fact that voters can have both expressive and instrumental motives creates a market for politicians that are less than keen on actually implementing policies they (publicly) promote, i.e., with a low p_{1i}. Given enough demand for parties that can provide expressive utility, one would expect supply to arise (Schuessler, 2000). The Dutch institutional context, with many parties competing and winning votes, seems to be an ideal breeding ground.

Politicians aiming to attract expressive voters may support income redistribution (or other costly things like, e.g., better schools, more police) in their rhetoric (or rather, ambiguously project an image of doing so, Schuessler, 2000), but, when in office, stay clear of policies that would cost their voters money. Politicians who do not realize they were elected for expressive reasons and actually raise taxes on their voters may lose votes in future elections.

2.5. Existing empirical evidence

Studies on the extent to which voting is instrumental or expressive often use lab experiments. The few studies that use real-world data present some evidence for expressive voting. Sobel and Wagner (2004) hypothesize that as the probability to cast a decisive vote goes down, the share of expressive voters increases, which subsequently leads to higher welfare spending. Empirically they find that state welfare payments in the USA are inversely related to the probability of being the decisive voter in the state, and interpret this as evidence of expressive voting. Pons and Tricaud (2018) compare electoral results when two candidates are competing with races in which initially three were competing, in French local and parliamentary elections which are held under a two-round plurality voting rule. They find that the presence of a third candidate often causes the loss of the candidate among the top two that is ideologically closest to her, and explain this by expressive voting behavior. Meya et al. (2020) study referenda among university students and find empirical results that rule out purely expressive voting. A previous study on voter turnout (not vote choice) in the Netherlands (Allers et al., 2021) does not find support for instrumental voting and hints at expressive voting. We do not know of a previous paper that explains voting behavior in relation to taxation using the concept of expressive voting.

Previous studies on local governments with electoral systems using proportional representation generally find that political color influences local tax policy. Examples are Allers et al. (2001) and Blom-Hansen et al. (2006), which study the Netherlands and both Norway and Sweden, respectively. Because these studies rely on cross-sectional data, they may suffer from omitted variable bias. However, Egerod and Larsen (2021; Denmark) and Högström and Lidén (2023, Sweden) use panel data, and come to similar conclusions. Nevertheless, the number of available studies is rather small.

Effects of changes in tax policy on the electoral success of incumbents in subnational elections have been found by, e.g., Besley and Case (1995) and Martinussen (2004). The former show that tax increases that are out of line with neighboring American states reduce the electoral success of incumbents. The latter finds that, among other factors, the levels of fees, charges, and taxes play a significant role in how voters evaluate incumbents in Norwegian local governments.

3. Institutional setup

Municipalities in the Netherlands have significant autonomy over spending decisions and carry out a broad range of governmental tasks. They are governed by a municipal council and an executive. The latter consists of a mayor and two or more aldermen. The Crown formally appoints the mayor, who has a mostly non-executive function. In practice, the Crown appoints the candidate nominated by the municipal council.

In municipal elections, every permanent resident aged 18 or more is eligible to vote. Municipal elections are quadrennial and held on the same day in all municipalities, with the exception of municipalities involved in an amalgamation process (Allers et al., 2021). These have off-cycle elections, which we exclude from our analysis. Dutch municipalities are relatively large, with an average population of 49,600 (in 2021). Therefore, the influence of a single vote is small.

Many parties participate in municipal elections. The allocation of seats is based on proportional representation, with one municipality-wide electoral district and no electoral threshold. This makes it easy to start a new party and gain seats. Pre-electoral coalitions are unusual, and post-electoral coalitions are hard to predict, which implies that the idea of 'close' elections does not play a role.

Municipalities in the Netherlands receive most of their funding from the national government. In 2018, general intergovernmental grants provided 49% of municipal income, and earmarked grants provided another 11% (Ministry of Finance, 2022). The system of intergovernmental transfers is equalizing and aims to enable every municipality to offer an equivalent level of government services at standard tax rates. Municipalities can opt to offer better public services and set higher tax rates, or vice versa. The grant allocation formula uses dozens of local characteristics to equalize both spending need and tax capacity. Empirical evidence suggests that inhabitants value Dutch local governments' services, because exogenous changes in general grant revenue are capitalized into house prices, while only a small fraction is passed on to residents through property taxes (Allers and Vermeulen, 2016).

By far the most important municipal taxes are property taxes, which account for 7 percent of municipal revenues on average. Other local taxes, of which tourist taxes and parking taxes are most important, together generate 3 percent of revenues. Municipalities are free to set property tax rates (except in 2006 and 2007, when rates were capped), and the tax base is defined by national law. Property values are updated annually and tax rates are usually set by dividing desired revenue by tax base (Hoeben et al., 2023, p. 40–41).

The property tax rate is expressed as a percentage of the value (land plus buildings). Before 2006, there were four kinds of property taxes: on ownership of residential property, on use of residential property, on ownership of non-residential property, and on use of non-residential property. The property tax rate on the use of residential property was abolished in 2006. To make our data comparable over the full research period, we also exclude this tax from our study.

Municipal user fees, most importantly sewage and waste collection fees, account for 7% of revenues. For households, sewer fees, garbage fees, and property taxes are levied via one combined tax bill. The combined amount has considerable political relevance. Annual rankings of municipal taxes often compare this combined tax bill for the average household in different municipalities.

Municipalities can shift revenues between the different categories of property tax, and between property taxes and user fees. User fees can be set below (not above) cost-covering levels, with the remainder being funded out of property tax revenue. Moreover, sewer fees, e.g., can be levied from occupants or owners, and the rate may be linked to property value, water use, or household size. This provides leeway to shift the local tax burden to certain groups, e.g., renters or home-owners. The city of Leiden, e.g., for a number of years did not levy either a sewer tax or a garbage tax at all, relying on the property tax instead. This shifted the tax burden from renters to home owners (especially of expensive homes) and to businesses.

4. Data and methods

We use panel data on Dutch municipalities in the period 1998–2021. Amounts are expressed in euros of 2021 using the consumer price index from Statistics Netherlands.

The composition of the municipal council changes once every four years, after the elections. However, changing tax policy takes time. As Egerod and Larsen (2021) point out, if policy adapts instantly to changing preferences, i.e., within an election cycle, then this will probably stem from politicians picking up signals through engaging with their constituents (Butler and Nickerson, 2011). If policy adapts a few years after elections, then changes in who gets elected are a more likely cause (Mansbridge, 2009). If adaptation takes more time than an election cycle, then more structural factors are probably at work (Erikson et al., 1993). Our dependent (tax) variables apply to the third year after each municipal council election, i.e., to the years 2001, 2005, 2009, 2013, 2017, and 2021. We do not want to use the last year before the next municipal elections, because politicians might feel an electoral incentive to (temporarily) lower taxes then. We also do not use the first or second years after an election because a new government needs time to change policy.

4.1. Prospective voting: Effect of the council's political color on tax policy

In the first part of our empirical analysis, we use linear regression, where the units of observation are municipalities. In 2021, there were 352 municipalities. During the research period, a number of municipalities amalgamated. The database is organized such that amalgamations are retrospectively applied, i.e., municipalities that merged during our research period have their data combined for the years prior to amalgamation so that the units we analyze remain constant.

In each regression, the dependent variable reflects either the level or the distribution of local taxes, whereas the main independent variable measures the political composition of the municipal government. We use five different dependent variables, listed in Table 1.

Property taxes are by far the most important instrument for municipalities to generate revenue. We measure property tax levels as, first, total per capita property tax revenue and, second, the property tax bill faced by the owner of a residential property with average value (in that municipality). Our third dependent variable is the average combined municipal tax bill (property tax, sewer fee, and garbage fee) for home-owning, multi-person households.

Economic tax incidence differs from legal tax incidence as it depends on elasticities of supply and demand. There has been much discussion among economists about who exactly bears the burden of local taxes. However, most politicians and taxpayers appear to be blissfully ignorant of this academic discussion and focus on legal tax incidence (tax distribution) instead. We operationalize progressive taxation using two dependent variables. The first measures the percentage of property tax revenue levied on residential (rather than non-residential) properties. Progressive here refers to a preference to tax businesses rather than residents. Note that the *within*-variance of this variable is relatively low (Table 1).

A second way in which we measure tax progressiveness is by comparing tax bills for homeowners with those for renters. The latter are often less wealthy than the former. Municipalities can tax renters less by collecting a larger share of their municipal taxes from property taxes, which renters do not pay, and a smaller share from sewer and waste collection fees. Municipalities may also levy a higher sewage fee on the owners of residential property than on those that rent it. We use the combined municipal tax bill for a multi-person household renting its home as a percentage of the tax bill for a home-owning multi-person household as our final dependent variable. The lower this percentage is, the less renters pay in comparison to owners, and the more progressive local taxation is.

Independent political variables

Our main independent variables measure the composition of the municipal council, being the outcome of the local elections. Our first measure is the seat share of an individual party. We include all parties that received at least 3 percent of total council seats (aggregated over municipalities and elections), to ensure we have sufficient observations. These are the Christian Democrats (CDA), Conservative Liberals (VVD), Social Democrats (PvdA), Social Liberals (D66), Green Left (GL), Socially Conservative Christians (CU), and local parties. The Socialist Party (SP) and the Orthodox Christian Right (SGP) do not reach our minimum threshold of having 3% of council seats. Local parties only participate in a single municipality. Consequently, they cannot be included as separate parties in the regressions. We group local parties and treat them as a single party participating in multiple jurisdictions. Local parties occupy 31% of all council seats. See Table A1 in Appendix A for summary statistics.

Our second measure of the political composition of the municipal council is its average ideological position. Apart from a traditional left-right scale, we use two other dimensions of voter ideology, developed by Laméris et al. (2018). These capture preferences for economic equality and preferences for markets and efficiency, respectively. Laméris et al. (2018) use factor analysis to derive ideology scales from a Dutch voter survey. Respondents were asked for both their policy preferences and their party preferences. These scales

Table 1
Descriptive statistics of dependent variables.

	N	Mean	Standard-deviation overall	Standard-deviation within	Minimum	Maximum
Tax level						
1. Total property tax revenue per capita (euro)[a]	1,947	218	70	36	56	610
2. Property tax bill for owner of residential building with average value (euro)	1,947	289	81	48	109	890
3. Municipal tax bill for owner of a residential building with average value (euro) [b]	1,947	775	119	81	368	1,517
Tax distribution						
4. Percentage of property tax revenues levied on residential property[c]	1,663	59	11	2	20	92
5. Municipal tax bill for the renter of a residential building[d] as a percentage of the tax bill for the owner of a residential building	1,947	53	13	6	−18	83

[a] This includes property taxes for owners of residential buildings, owners of non-residential buildings, and users of non-residential buildings.

[b] Calculated as: sewer fee for multi-person household + garbage fee for multi-person household – tax discount (Dutch: *heffingskorting*) + property tax bill for residential building with an average property value. A tax discount is given by very few municipalities and may result in negative combined tax bills for some renters.

[c] The number of observations for this variable is lower because we do not use data from before 2006. In 2006, the property tax on the use of residential property was abolished.

[d] Calculated as: sewer fee for a multi-person household + garbage fee for a multi-person household – tax discount.

Source: COELO. COELO is a research institute of the University of Groningen that annually collects local tax data.

thus show what citizens who voted for a particular party prefer, and do not necessarily reflect party manifestos. See Table 2. Because local parties are not included in these ideology scales, we assume that they are ideologically neutral. The average ideological position of the municipal council is calculated by multiplying a party's council seat share by its ideology score. These scores are summed for all parties in the municipal council for which an ideology score is known and divided by the total seat share of those parties. Parties for which no ideology score is known are assumed to have a neutral score. See Table A2 (Appendix A) for descriptive statistics.

To examine how the effect of changes in the composition of the municipal council is mediated by the relative importance of municipal taxation for a municipality's funding, we use a proxy for the latter. This is calculated as the percentage share of property tax revenue in the total of property tax revenue and general (non-earmarked) grants from the central government. This share ranges from 6 to 56 percent (Table A3). To rule out reverse causality, we lag this proxy by one election cycle (four years).

Control variables

We control for the general grant municipalities receive from the central government, which is their main source of funding. We also include as controls the per capita value of residential and non-residential buildings, which form the base of the property tax. Table A3 (Appendix A) shows descriptive statistics. We do not include demographic variables as controls since they may correlate with voter preferences. Moreover, the allocation the general grant (which we do include) is based on a formula that contains a large number of demographic variables, because it aims to equalize differences in spending need (and tax base) among municipalities.

To control for unobserved, time-invariant local characteristics, we use municipality fixed effects. To control for nation-wide events that may influence local taxes, such as changes in the national economy or in legislation, we include period fixed effects. Using two-way fixed effects models can lead to misleading estimates if treatment effects are heterogeneous (De Chaisemartin and D'Haultfoeuille, 2022; 2024). We explore this in Appendix F.

4.2. Retrospective voting: Effect of tax changes on incumbents' electoral success

Allers et al. (2022) find that incumbent parties on average lose votes in Dutch local elections. In this second part of our empirical analysis, we test whether this vote loss depends on changes in tax levels, which would point to retrospective voting. We also investigate whether right-wing incumbents are punished more for tax increases than left-wing incumbents.

Here, the dependent variable is the percentage change in a party's share of municipal council seats. The independent variable of interest is either the change in the property tax bill for owner-occupiers of a house with a value equal to the local average, or the change in the average combined tax bill for owner-occupiers; both in percentages. The units of observation are now municipality-party combinations, not municipalities. We do not retroactively apply amalgamations on our data here to keep the units of observation constant, as we did in our analysis of prospective voting (see above). Instead, municipalities that were amalgamated are now coded as different from their constituent parts. Consequently, for amalgamated municipalities, changes in seat share can only be computed from the second regular election after amalgamation onward.

We interact the tax change variable with a dummy variable indicating incumbency, i.e., membership of the governing coalition, and a variable indicating political color (left-wing or right-wing). Based on Laméris et al. (2017), we consider Socially Conservative Christians, Christian Democrats, Conservative Liberals, and Orthodox Christian right as right-wing, and Green Left, Social Democrats, and Socialist Party as left-wing (Table 2). Other parties are treated as neither right nor left. As controls, we include lagged seat share, and party-period fixed effects. The latter account for some parties being more (or less) popular countrywide in specific years because of, e.g., a popular national party leader or cabinet membership. For descriptive statistics, see Table A4.

5. Results prospective voting: effects of political color on tax policy

The within variation reported in Tables 1, A1 and A2 shows that both the composition of the municipal council and local tax policies varied considerably during the research period. Now, we investigate whether one influences the other. We first estimate the effects of changes in the municipal council on changes in local tax levels or tax distribution. Next, we estimate the effects of changes in tax levels on changes in the electoral success of incumbents.

Table 2
Party scores on ideology scales.

Ideology scale	Parties that score high on this scale	Parties that score low on this scale
Traditional left – right	Socially Conservative Christians; Christian Democrats; Conservative Liberals; Orthodox Christian right	Green Left; Social Democrats; Socialist Party
Preference for economic equality	Green Left; Social Democrats; Socialist Party	Social Liberals; Socially Conservative Christians; Christian Democrats; Conservative Liberals; Orthodox Christian right
Preference for markets and efficiency	Social Liberals; Christian Democrats; Conservative Liberals	Green Left; Socialist Party; Socially Conservative Christians; Orthodox Christian right

Based on Laméris et al. (2017).

Table 3
Regression results: influence of individual parties in the municipal council on local taxes.

	(1)	(2)	(3)	(4)	(5)
	Tax levels			Tax distribution	
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill of a renter as a percentage of the tax bill of a homeowner
Share (%) Christian Democrats	0.01	0.23	−0.31	0.03	−0.06
	(0.23)	(0.36)	(0.65)	(0.02)	(0.06)
Share (%) Social Democrats	0.09	0.38	−0.66	0.02	−0.07
	(0.23)	(0.33)	(0.57)	(0.02)	(0.05)
Share (%) Conservative Liberals	0.05	0.21	−1.32*	−0.01	−0.10*
	(0.26)	(0.38)	(0.73)	(0.03)	(0.06)
Share (%) Social Liberals	−0.64***	−0.53	0.29	−0.01	0.17**
	(0.24)	(0.40)	(0.67)	(0.03)	(0.07)
Share (%) Socially Conservative Christians	−0.57**	−0.72**	0.66	0.03	0.10
	(0.26)	(0.36)	(0.84)	(0.03)	(0.07)
Share (%) Green Left	−0.08	0.14	0.17	0.02	0.05
	(0.30)	(0.47)	(0.75)	(0.03)	(0.08)
Share (%) Local parties	−0.08	0.02	0.11	0.01	−0.01
	(0.17)	(0.26)	(0.45)	(0.02)	(0.04)
Number of observations	1947	1947	1947	1663	1947
Number of municipalities	351	351	351	351	351
R2	0.635	0.534	0.460	0.242	0.288

Note: OLS estimates. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$ based on cluster-robust standard errors. Every column displays the results of a separate regression. All models include control variables, period fixed effects and municipal fixed effects. The baseline consists of parties not listed here.

Table 4
Regression results: influence of the average ideological profile of the municipal council on local taxes.

	(1)	(2)	(3)	(4)	(5)
	Tax levels			Tax distribution	
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill of a renter as a percentage of the tax bill of a homeowner
Right-wing	6.35*	9.32*	−1.49	−0.11	−1.76**
	(3.55)	(5.54)	(9.03)	(0.33)	(0.83)
R2	0.633	0.539	0.462	0.236	0.273
Preference for economic equality	−7.3	−14.8	9.5	0.5	3.0
	(10.0)	(15.3)	(23.3)	(0.9)	(2.3)
R2	0.632	0.538	0.462	0.236	0.271
Preference for markets and efficiency	20.8	47.4	−53.5	−0.0	−10.7**
	(21.7)	(32.8)	(51.4)	(2.1)	(5.1)
R2	0.632	0.539	0.462	0.236	0.273
Number of observations	1933	1933	1933	1651	1933
Number of municipalities	349	349	349	349	349

Note: OLS estimates. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$ based on cluster-robust standard errors. Every column displays the results of three separate regressions. All models include control variables, period fixed effects, and municipal fixed effects.

5.1. Political color measured as seat shares of individual parties in the municipal council

Table 3 shows how changes in the individual seat share of parties in the municipal council influence changes in local taxes or tax distribution. Every column corresponds to a different dependent variable. Column 1 of Table 3, e.g., shows that if Social Liberals or Socially Conservative Christians increase their council seat share by 1 percentage point, then, on average, per capita property tax revenue decreases by 0.6 euro. This effect is negligibly small, given average tax revenue (218 euros, Table 2) and average party shares (5.1 and 4.4 percent, respectively, Table A1).

A few other coefficients in Table 3 are significant at the 5 percent confidence level as well, but again, the effects are insubstantial. E.

g., for every percentage point the Social Liberals win, the average tax bill of a home renter as a percentage of the tax bill of a home owner (average value: 53 percent, Table 2) increases by 0.17 percentage points.

Given the many insignificant results and the small size of the coefficients that are significant, Table 3 does not provide evidence of an effect of changes in political preferences of the electorate, as measured by the council seat share of individual parties, on tax policy.

5.2. *Political color measured as average ideological profile of the municipal council*

Table 4 shows the influence of an alternative measure for changes in the political preferences of the electorate, namely change in the average ideological profile of the municipal council, on changes in local taxes. The first cell in Column 5 shows that, when the council becomes 1 unit more right-wing (based on the scale of Laméris et al. (2017), with an average score of 5.5), the average tax bill for a renter as a percentage of that for a homeowner (the average value being 53, Table 2) decreases by 1.8 percentage points. Similarly, this percentage decreases when the council becomes more market-friendly. Both effects are insubstantial. The other coefficients in Table 4 are insignificant.

5.3. *Why do we find such small effects?*

The evidence for influence of the political composition of the municipal council on taxation that we find is weak to the point of being non-existent. One possible explanation is that local taxation provides, on average, a relatively unimportant share of Dutch local government funding. For most municipalities, intergovernmental grants are more important than taxes. However, due to the grant allocation formula, the importance of own taxation differs considerably among municipalities. This allows us to test this explanation.

In the row ‘right-wing’ of Table 4, we showed how changes in the average left-right profile of the municipal council influences local taxes. We now interact this variable by a proxy for the relative importance of local taxation for a municipality’s funding. As a proxy, we use the lagged percentage share of property tax revenue in the total of property tax revenue and general (non-earmarked) grant from the central government. Because we do not want to impose linearity on the interaction effect, we replace the continuous moderator variable by dummies, defined by breaking the proxy variable into three bins of equal size (Hainmueller et al., 2019). Thus, we test whether marginal effects differ for municipalities where the share of their own taxation is low, medium-sized, or high, respectively.

Fig. 1 presents marginal effect plots derived from the regression results. Conventional 95% confidence intervals show whether an effect differs significantly from zero. However, the question here is whether the effect differs for different values of the mediator variable. To that end, we present 83% confidence intervals (see, e.g., Bolsen and Thornton, 2014), based on cluster-robust standard errors. For example, the first plot in Fig. 1 shows that when the average ideological profile of a municipality increases by one unit, the

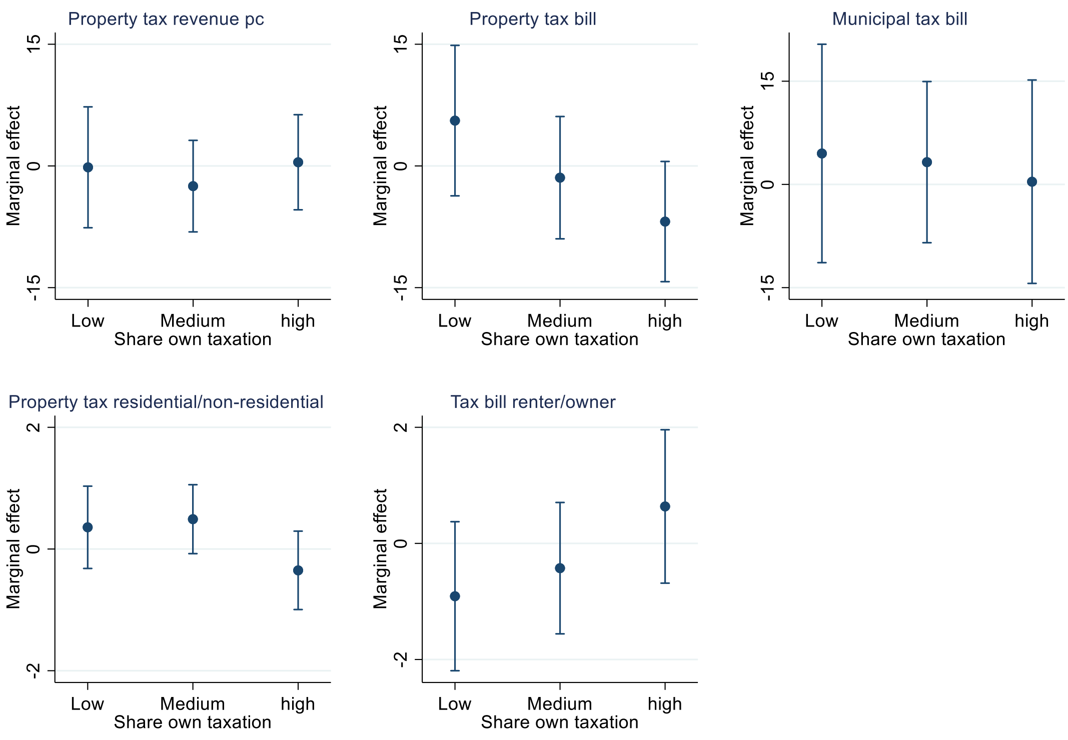

Fig. 1. Marginal effects of the percentage change in the average left-right profile of the municipal council on the subsequent percentage change in tax level or tax distribution, mediated by the relative importance of own taxation in a municipality’s funding mix.
Note: 83 percent confidence intervals. The regression results on which this Figure is based are available in Appendix E.

change in property tax revenue per capita is approximately zero for municipalities that have a low share of own taxation. A one unit increase in the ideological score for municipalities that have a medium share of own taxation has a slightly negative but statistically insignificant impact on changes in property tax revenue per capita. For municipalities with a relatively high share of own taxation the impact is positive but again insignificant. Furthermore, the overlapping confidence intervals indicate that these effects are similar (i.e. not statistically different from one another), for municipalities with a low, a medium or a high share of own taxation.

Clearly, the marginal effect plots in Fig. 1 do not provide evidence that the influence of voters on tax policy is larger when own taxation is a more important part of the local funding mix.

5.4. Robustness

Our results are robust to changes in the way our dependent variable and our independent variables of interest are operationalized. As an additional robustness test, we developed an alternative ideology scale, based on an existing voter survey (Jansen and Denters, 2018). This survey contains the following question: "*Could you indicate on the scale below which combination of social expenditures and taxes you prefer?*" It also asked respondents for their vote choices. We calculate which percentage of supporters of a certain party prefer either higher or lower taxes. We could also calculate this for local parties. Since the number of respondents per party is rather low, we use this alternative ideology scale in a robustness test only. When repeating the analysis based on this alternative ideology scale, we

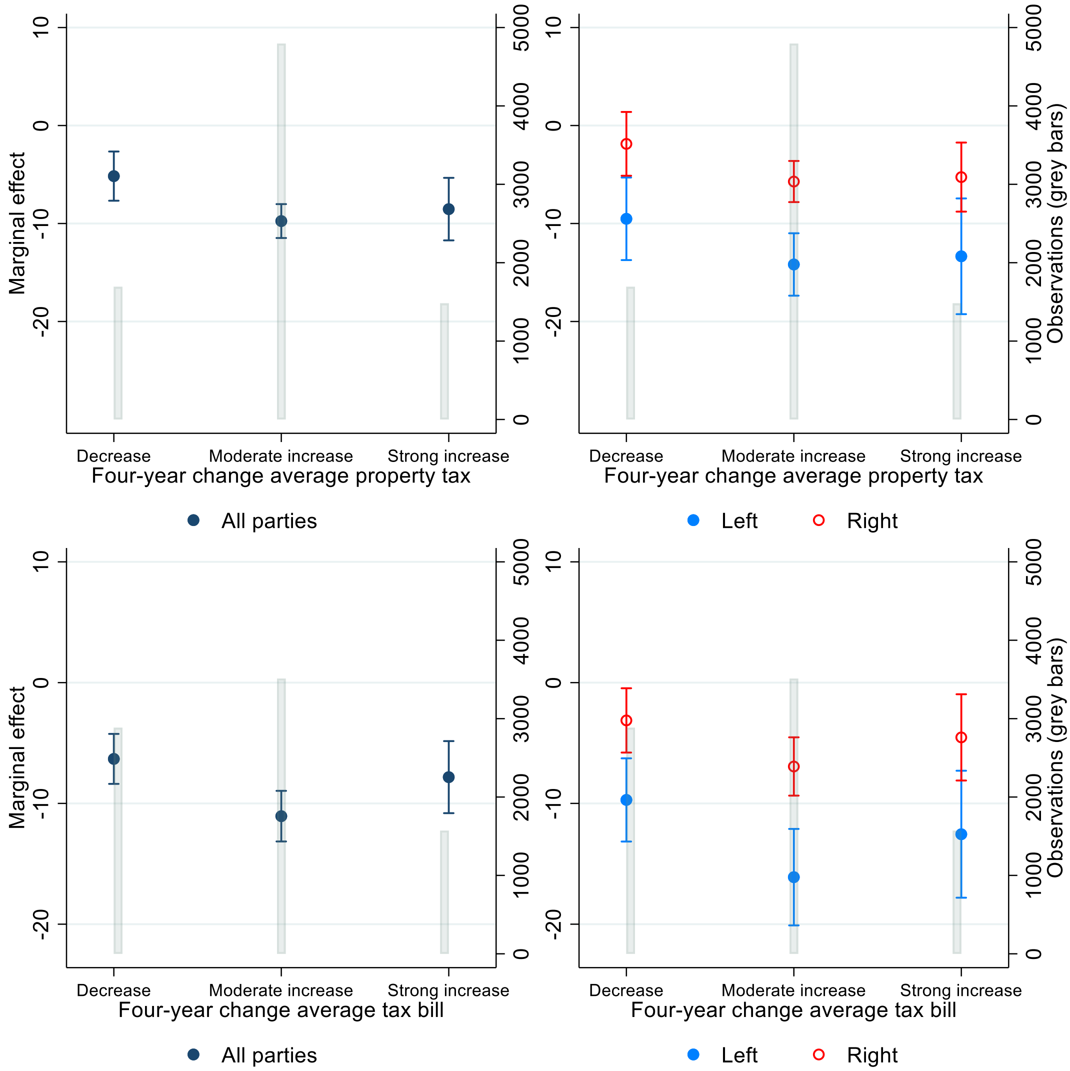

Fig. 2. Marginal effects of being incumbent on the percentage change in a party's share of council seats, mediated by change in average property tax bill (top panel) and average combined tax bill (bottom panel).
Note: 83% confidence intervals. The histograms show the frequency distribution of the mediating variable (scale on right-hand axis). The regression results on which this Figure is based are available in Appendix E.

find similar results. See Appendix Bfor details.

We also replicated the analysis after dropping municipalities in which local parties hold a large share of the municipal council seats. Again, this yields similar results (Appendix C).

Finally, our models use two-way fixed effects. This can lead to misleading estimates if the treatment effects are heterogeneous, i.e., not constant among groups and over time (De Chaisemartin and D'Haultfoeuille, 2024). We replicated Table 4 as closely as possible, in a way that is robust for violation of the assumption of constant treatment effects, and again obtain coefficients that are mainly insignificant and insubstantial (Appendix F).

6. Results retrospective voting: effects of tax changes on incumbent parties' electoral success

We now examine if voters react to tax increases (or decreases). We consider changes in both the average property tax and the average combined municipal tax bill for homeowners, as defined above. We also test whether right-wing incumbents lose more votes than left-wing incumbents after a tax increase, because right-wing politicians are not normally expected to raise taxes.

Because we do not want to impose linearity on the interaction effect (Hainmueller et al., 2019), we replace the continuous moderator variable by dummies, defined by breaking each of the tax increase variables into three bins. The first bin contains observations on tax reductions, the second contains observations on moderate tax increases, and the third bin contains observations on strong tax increases. We place the threshold for a "strong" increase at the 8th decile (i.e., the 20 percent highest tax increases in our dataset are considered strong).

Fig. 2 presents plots of the marginal effect of being a member of the governing coalition on the change in council seat share, conditional on the four-year change in the property tax (top panel) or in the combined tax bill (bottom panel). As in Fig. 1, we present 83% confidence levels based on cluster-robust standard errors.

The plots on the left-hand side show that a tax decrease results in a significantly lower vote loss than a moderate increase, for both the property tax and the combined tax bill. However, the electoral consequences of a strong tax increase do not differ significantly from those of a modest increase or even a decrease. Changing the threshold for strong increases from the 80th percentile to the 75th percentile yields similar results (Appendix D).

The plots on the right-hand side differentiate between left-wing and right-wing incumbents. As it turns out, left-wing incumbents are punished more severely for joining the local executive, regardless how taxes were changed. Our hypothesis that right-wing incumbents would be punished more for tax increases is clearly rejected.

7. Conclusion

This paper asks whether voters in the Netherlands trade off taxes and local public services by changing the political composition of municipal councils. We analyze two channels that may enable this. The first uses prospective voting, aimed at selecting politicians expected to make policy according to the voters' wishes. The second channel uses retrospective voting, aimed at rewarding or punishing incumbents based on their past performance. Both these channels are based on instrumental voting, according to which people vote with the motivation to influence public policy. However, voting may also be expressive, when this motivation is largely absent. Expressive voting is used to confirms one's identity or reflects moral views or social pressures.

We find that changes in voting behavior as reflected in the political composition of Dutch municipal councils do not predict changes in local tax levels, or changes in the distribution of the local tax burden. Consequently, we find no evidence for prospective instrumental voting. A possible explanation for this null result is that local taxation provides, on average, a relatively unimportant share of Dutch local government funding. This may allow some local politicians to leave tax policy unchanged in order to avoid losing votes. Because the importance of own taxation differs considerably among municipalities due to the design of the grant allocation system, we were able to test this explanation empirically, and reject it.

We do find evidence of instrumental retrospective voting: incumbents that lower taxes fare better at the polls than incumbents that increase taxes moderately. However, strong tax increases do not lead to significantly more severe electoral punishment than moderate increases or even decreases. Voters' reactions to strong tax increases are remarkably sanguine. A possible explanation that merits future research is that strong tax increases often occur in situations of severe fiscal stress, and that voters acknowledge that such increases are inevitable.

Our hypothesis that right-wing incumbents are punished more severely for raising taxes than left-wing incumbents is not supported. Left-wing parties are, on average, always punished more severely for joining the local executive, no matter how taxes were changed. This goes against the widespread belief (supported by survey results, see Appendix B), that left-wing voters support higher taxes in return for higher public service levels, whereas right-wing voters prefer lower taxes even at the cost of lower service levels.

The literature offers some possible explanations. First, both increasing taxes and reducing public services are unpopular with the electorate. Loss aversion may make the net effect of any change in the trade-off between lower taxes and higher public service levels feel like a deterioration (Blom-Hansen et al., 2006).

The theory that voters try to discipline politicians in a principal-agent setting offers a different explanation. Among subnational governments, this may give rise to political yardstick competition. If voters use changes in local taxes relative to such changes in nearby jurisdictions as a decisive indicator to judge the performance of political parties, and do not take public services levels into consideration because these are more difficult to quantify, then politicians of all colors will be reluctant to increase taxes. However, this theory does not make clear predictions on prospective voting and thus cannot explain the (null)result we find here. Nor does it explain the existence of left-wing parties, i.e., parties commonly associated with higher public spending and supported by voters who say, in surveys, that they are willing to pay higher taxes.

Perhaps the most plausible explanation for the results of both our analyses of prospective and of retrospective voting behavior is that we find a coexistence of expressive prospective voting, aimed at deriving benefits from voting according to what one feels is just or to express one's identity, on the one hand, and pocketbook retrospective voting, aimed at disciplining politicians who raise taxes, on the other hand. Apparently, many left-wing voters do not actually want higher taxes, but vote left-wing for expressive reasons, expecting their vote not to matter. If left-wing parties subsequently gain office and raise taxes, these voters update their expectations about the degree to which their vote matters, and may become instrumental voters, disciplining incumbents. Most left-wing politicians seem to realize that many of their voters do not really want tax increases and try to avoid them, something right-wing politicians were always bound to do.

Taxes may still be raised in an attempt to placate voters. First, some politicians may be unaware of being supported by expressive voters. Secondly, some voters for left-wing parties may of course benefit from higher taxes, either in monetary terms or because higher taxes fit with their social preferences (Meya et al., 2020).

However, because we find that changes in the composition of the municipal council do not lead to changes in taxes, and because tax increases are punished by both left-wing and right-wing voters, our results suggest that tax increases for political or ideological reasons are rare. Rather, such increases are more likely to be the result of fiscal stress (see also, e.g., Lewis-Beck, 1977). If fiscal stress is severe, voters are more likely to know about it and may refrain from punishing incumbents who raise taxes because they understand the need to do so. However, moderate fiscal stress will be less well known. In those cases, tax increases lead to vote losses for incumbent parties. Vote-maximizing incumbents may be tempted to draw a cynical lesson from this: should ignore impending fiscal problems until they require substantial tax increases, and not raise taxes in time to nip fiscal problems in the bud. However, voters will eventually update their expectations if this happens too often.

Our results question the view as described by Oates (1972) that decentralization may improve social welfare by allowing local democracies to trade off tax costs against the benefits of public services. If many voters do not aim to influence public policy but to obtain expressive benefits, and if (moderate) tax increases are punished by left-wing and right-wing voters alike, how can such a trade-off be made? Of course, this question cannot be settled based on this study alone. For one thing, our analysis is limited to tax policy. Future research could investigate whether voters may affect policies in other policy areas like public service provision.

CRediT authorship contribution statement

Maarten Allers: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Validation, Visualization, Writing – original draft, Writing – review & editing. **Harm Rienks:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

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Data availability

Data will be made available on request.

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Appendix A. Descriptive statistics

This Appendix contains descriptive statistics of the independent variables.

Table A1
Percentage of council seats per party

	N	Average	Standard-deviation overall	Standard-deviation within	Minimum	Maximum
Municipal council						
Christian Democrats	1947	19.9	9.2	4.3	0.0	73.7
Socially Conservative Christians	1947	4.4	7.0	2.4	0.0	42.1
Social Democrats	1947	14.1	9.4	6.4	0.0	47.6

(*continued on next page*)

Table A1 (*continued*)

	N	Average	Standard-deviation overall	Standard-deviation within	Minimum	Maximum
Conservative Liberals	1947	15.2	7.7	4.3	0.0	52.4
Social Liberals	1947	5.1	5.8	3.9	0.0	31.1
Green Left	1947	4.5	5.7	2.7	0.0	38.5
Local parties	1947	31.0	18.4	9.0	0.0	100.0

Sources: Municipal councils: Ogink (2023); Kiesraad (2023).

Table A2
Weighted average scores on ideology scales of municipal councils (based on Laméris et al., 2017)

Ideology scale	N	Average	Standard deviation overall	Standard deviation within	Minimum	Maximum
Municipal council						
Right-wing	1933	5.50	0.49	0.21	4.3	7.0
Preference for economic equality	1933	−0.26	−0.16	0.08	−0.9	0.2
Preference for markets and efficiency	1933	0.10	−0.08	0.04	−0.2	0.3

Table A3
Other variables

	N	Average	Standard-deviation	Minimum	Maximum
Relative importance local taxation	1947	18.5	5.1	6.0	56.4
General (not earmarked) grant per capita (1000 euro)	1947	0.98	0.31	0.39	3.29
Property value residential buildings per capita (1000 euro)	1947	116	38.21	43.8	418
Property value non-residential buildings per capita (1000 euro)	1947	25.75	10.36	6.74	100

Source: Statistics Netherlands.

Table A4
Descriptive statistics variables retrospective voting

	N	Average	Standard-deviation	Minimum	Maximum	Data source
Change in council seat share (%)	6509	3,72	51,01	−100	557	Ogink (2023); Kiesraad (2023)
Incumbent (dummy)	6509	0.52	0.50	0	1	Vereniging Nederlandse Gemeenten; VNG 2023
Change in property tax bill for owner of residential building with average value (euro)	6509	8.76	13.96	−28.7	143.26	COELO
Change in municipal tax bill for owner of a residential building with average value (euro)	6509	6.25	13.01	−30.71	93.07	COELO
Left (dummy)	6509	0.41	0.49	0	1	Ogink (2023); Kiesraad (2023)
Right (dummy)	6509	0.53	0.49	0	1	Ogink (2023); Kiesraad (2023)
Share of council seats (lagged)	6509	0.15	0.09	0.02	0.74	Ogink (2023); Kiesraad (2023)

Appendix B. Robustness analysis: alternative ideology scale

As a robustness test, we developed an alternative ideology scale, based on an existing, government funded survey of voters in local elections (in Dutch: *Lokaal Kiezersonderzoek*), carried out by researchers from several universities and Statistics Netherlands (Jansen and Denters, 2018). This survey contains the following question: “Could you indicate on the scale below which combination of social expenditures and taxes you prefer.” Respondents could indicate, on a scale of 0–10, if they were strongly in favor of reducing local taxes (score 0) or strongly in favor of increasing local taxes (score 10).

The survey also asked respondents for their vote choice. By combining these two questions we calculated which percentage of voters for a certain party preferred either higher or lower taxes (and social expenditures). We could also calculate this for local parties. Since the number of respondents per party is rather low in this survey, we use this alternative ideology scale for a robustness test only. When repeating the analysis based on this alternative ideology scale, we find similar results.

Table B1
Reaction respondents on the question whether they prefer lower or higher local taxes, per political party.

Party (in Dutch)	Number of respondents voting for this party	Preferring lower local taxes	Preferring no change in local taxes	Preferring higher local taxes	Net share of voters in favor of increasing taxes
Freedom Party (PVV)	24	42%	58%	0%	−42%
Blank vote	9	33%	67%	0%	−33%
Conservative Liberals (VVD)	194	26%	63%	11%	−15%
Orthodox Christian right (SGP)	21	19%	76%	5%	−14%
Local party/different party	465	21%	70%	9%	−11%

(*continued on next page*)

Table B1 (*continued*)

Party (in Dutch)	Number of respondents voting for this party	Preferring lower local taxes	Preferring no change in local taxes	Preferring higher local taxes	Net share of voters in favor of increasing taxes
Christian combination (CU/SGP)	21	19%	67%	14%	−5%
Other national party	27	26%	52%	22%	−4%
I do not want to disclose for which party I voted	29	17%	62%	21%	3%
Socially Conservative Christians (CU)	57	12%	68%	19%	7%
Social Liberals (D66)	142	8%	77%	15%	7%
Christian Democrats (CDA)	189	7%	76%	16%	9%
Socialist Party (SP)	82	13%	61%	26%	12%
Social Democrats (PvdA)	159	6%	64%	30%	25%
Green Left (GL)	169	7%	52%	41%	34%
Progressive combination (incl. PvdA, GL)	20	5%	45%	50%	45%
Animal party (PvdD)	21	0%	52%	48%	48%
Total	1629				

Parties are listed based on the score in the right-most column. Source: Jansen and Denters (2018).

Table B1 shows the reactions of respondents to this question per party. In this Table respondents that indicated a score of 0–3 are categorized as preferring lower taxes; respondents that indicated a score of 4–6 are categorized as not preferring a change in local taxes; respondents that indicated a score of 7–10 are categorized as preferring higher taxes.

We calculated our alternative ideology scale by subtracting the percentage of voters for a certain party in favor of lower taxes from the percentage of voters for a certain party in favor of higher taxes (see right-hand column in Table B1). A more negative value indicates a higher preference for tax reductions whereas a more positive value points to a higher preference for tax increases.

The Tables below present results based on this ideology scale. Using this scale does not lead to different conclusions.

Table B2
(to be compared with Table 4): Regression results: influence of the average ideological profile of the municipal council on local taxes

	(1)	(2)	(3)	(4)	(5)
	Tax levels			Tax distribution	
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill of a renter as a percentage of the tax bill of a homeowner
Preference for higher taxes	−43.9	−40.3	70.1	4.4	11.4
R2	0.633	0.538	0.462	0.238	0.272
Number of observations	1933	1933	1933	1651	1933
Number of municipalities	349	349	349	349	349

Note: OLS estimates. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$ based on cluster-robust standard errors. Every column displays the results of a separate regression. All models include control variables, period fixed effects, and municipal fixed effects.

Appendix C. Robustness analysis: municipalities with large share of local parties dropped from dataset

Here we reproduce Tables 3 and 4 and Fig. 1 from the main analysis, after dropping the 237 observations where local parties won more than half of council seats (on average, over the research period).

Table C1
(to be compared with Table 3): Regression results: influence of individual parties in the municipal council on local taxes

	(1)	(2)	(3)	(4)	(5)
	Tax levels			Tax distribution	
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill of a renter as a percentage of the tax bill of a homeowner
Share (%) Christian Democrats	−0.34	−0.21	−0.65	0.03	−0.04
Share (%) Social Democrats	−0.03	0.32	−0.36	0.02	−0.04
Share (%) Conservative Liberals	−0.13	0.07	−1.12	−0.00	−0.10
Share (%) Social Liberals	−0.64***	−0.51	0.47	−0.01	0.19**
Share (%) Socially Conservative Christians	−0.56**	−0.69**	0.40	0.03	0.07
Share (%) Green Left	−0.14	0.15	0.36	0.02	0.06
Share (%) Local parties	−0.20	−0.12	0.17	0.00	−0.00
Number of observations	1710	1710	1710	1459	1710
Number of municipalities	310	310	310	310	310
R2	0.628	0.528	0.497	0.228	0.257

Note: OLS estimates. *** p<0.01, ** p<0.05, * p<0.1 based on cluster-robust standard errors. Every column displays the results of a separate regression. All models include control variables, period fixed effects and municipal fixed effects. The baseline consists of parties not listed here. Municipalities where local parties gained half of council seats or more (on average, over the research period) dropped from the analysis.

Table C2(to be compared with Table 4): Regression results: influence of the average ideological profile of the municipal council on local taxes

	(1)	(2)	(3)	(4)	(5)
	Tax levels			Tax distribution	
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill of a renter as a percentage of the tax bill of a homeowner
Right-wing	2.99	5.67	−4.54	−0.17	−2.14**
R2	0.623	0.528	0.495	0.225	0.244
Preference for economic equality	3.8	−4.0	9.9	0.7	3.1
R2	0.622	0.528	0.495	0.226	0.242
Preference for markets and efficiency	−8.2	16.9	−42.5	−0.7	−9.0
R2	0.622	0.528	0.495	0.225	0.242
Number of observations	1709	1709	1709	1458	1709
Number of municipalities	310	310	310	310	310

Note: OLS estimates. *** p<0.01, ** p<0.05, * p<0.1 based on cluster-robust standard errors. Every column displays the results of three separate regressions. All models include control variables, period fixed effects, and municipal fixed effects. Municipalities where local parties gained half of council seats or more (on average, over the research period) dropped from the analysis.

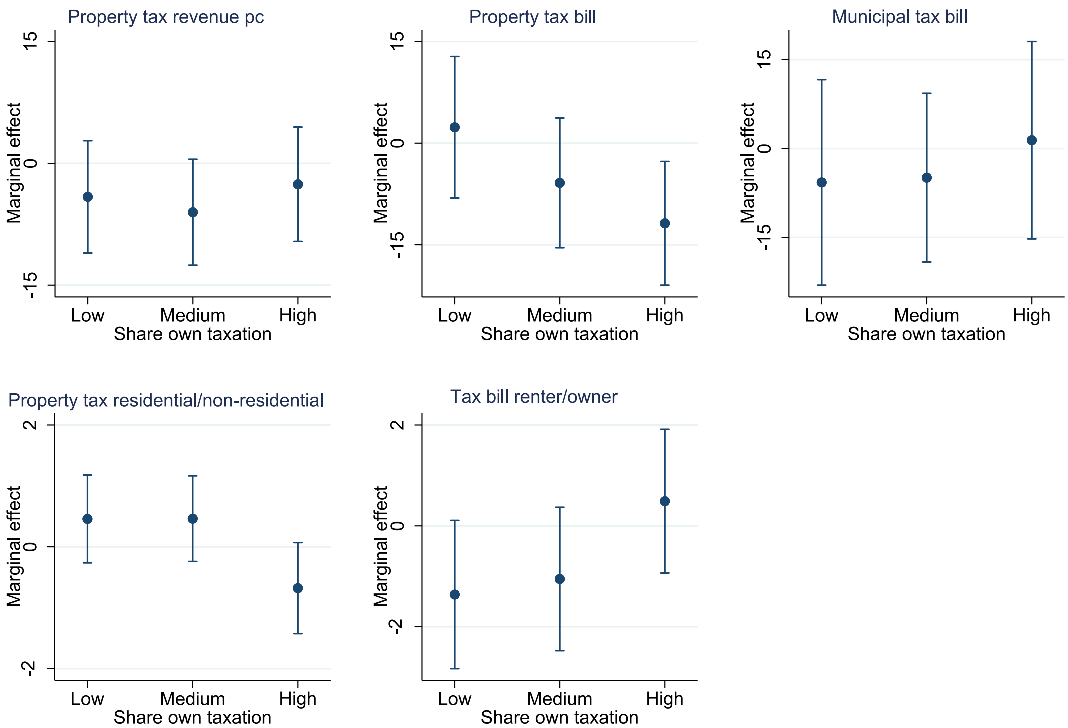

Fig. C1 (to be compared with Fig. 1). Marginal effects of the percentage change in the average left-right profile of the municipal council on the subsequent percentage change in tax level or tax distribution, mediated by the relative importance of own taxation in a municipality's funding mix.

Appendix D. Robustness test: different cut-off point for strong tax increases

Figure D1 is similar to Fig. 2, except that here the threshold for strong tax increases is set at the 75th percentile instead of the 80th percentile.

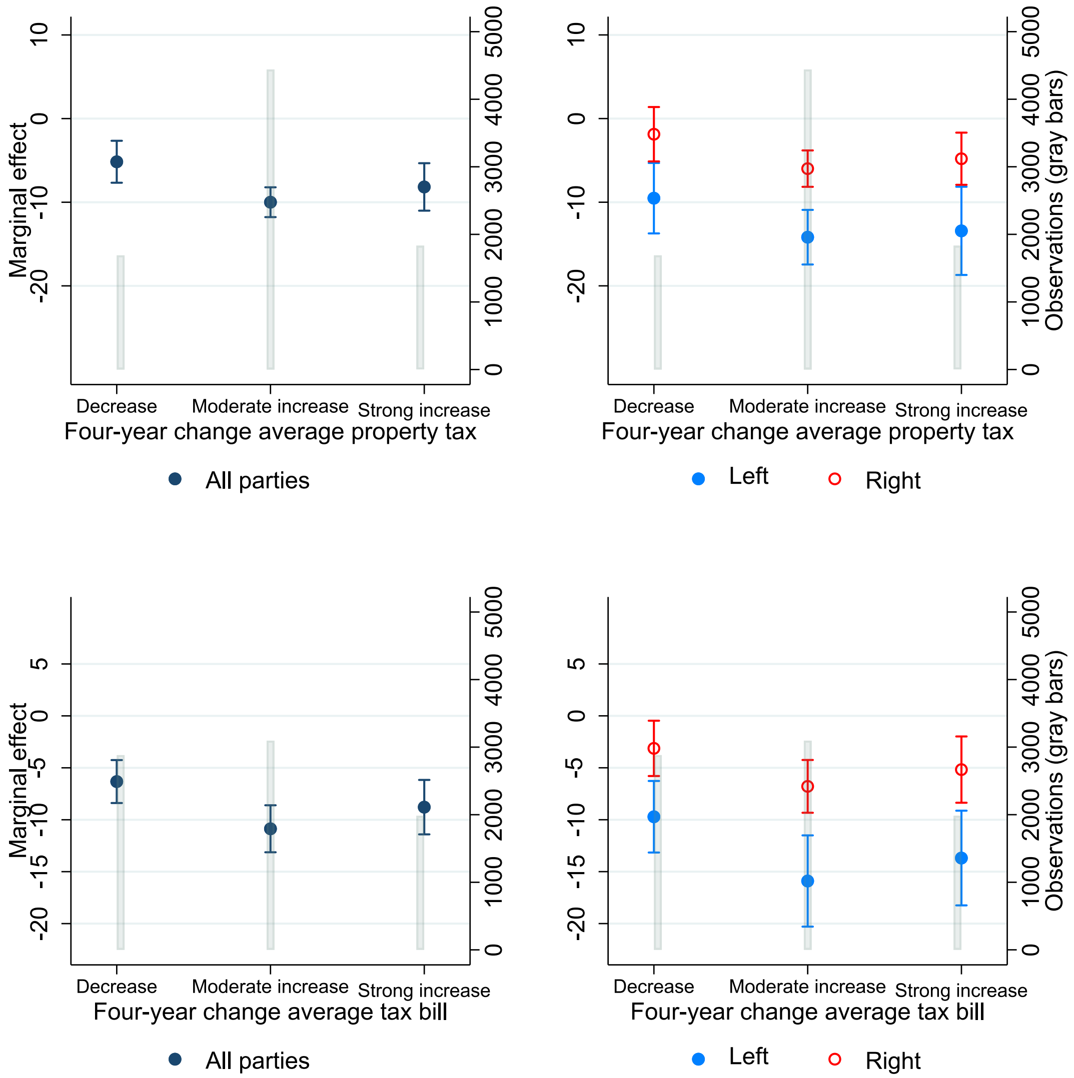

Fig. D1. Marginal effects of being incumbent on the percentage change in a party's share of council seats, mediated by change in average property tax bill (top panel) and average combined tax bill (bottom panel) Note: 83% confidence intervals. The histograms show the frequency distribution of the mediating variable (scale on right-hand axis).

Appendix E. Regression results underlying Figs. 1 and 2

Table E1
Regression results underlying Fig. 1

	(1)	(2)	(3)	(4)	(5)
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill for a renter as a percentage of the tax bill of a homeowner
Right	−0.17	5.59	4.50	0.36	−0.91
MediumTaxShare	25.87	53.20*	22.22	−0.88	−4.15
HighTaxShare	23.23	104.42***	55.87	4.03	−11.57*
MediumTaxShare #Right	−2.32	−7.03	−1.26	0.13	0.48

(continued on next page)

Table E1 (*continued*)

	(1) Property tax revenue per capita (euro)	(2) Average property tax for homeowner (euro)	(3) Average municipal tax bill for homeowner (euro)	(4) Percentage of property tax revenues levied on residential property	(5) Municipal tax bill for a renter as a percentage of the tax bill of a homeowner
HighTaxShare #Right	0.62	−12.44*	−4.11	−0.71	1.55
Number of observations	1540	1540	1540	1540	1540
Number of municipalities	347	347	347	347	347
R2	0.603	0.503	0.222	0.245	0.360

Note: OLS estimates. *** p<0.01, ** p<0.05, * p<0.1 based on cluster-robust standard errors. All models include control variables, period fixed effects, municipal fixed effects. The # symbol denotes interaction.

Table E2
Regression results underlying Fig. 2

	(1) Property tax change	(2) Tax bill change
Incumbent	−15.37***	−12.96**
Decrease	−4.21	1.81
StrongIncrease	−0.47	0.18
Incumbent#Decrease	10.94	1.45
Incumbent#StrongIncrease	11.04	8.51
Left	−48.17***	−44.00***
Right	−20.27	−16.18
Incumbent#Left	1.19	−3.15
Incumbent#Right	9.66*	6.02
Decrease#Left	0.94	−5.52
Decrease#Right	2.31	−3.49
StrongIncrease#Left	1.41	−1.76
StrongIncrease#Right	5.16	−0.15
Incumbent#Decrease#Left	−6.27	4.95
Incumbent#Decrease#Right	−7.09	2.37
Incumbent#StrongIncrease#Left	−10.20	−4.95
Incumbent#StrongIncrease#Right	−10.59	−6.10
Lagged seat share	−102.21***	−101.70***
Observations	6509	6509
R-squared	0.45	0.45

Note: OLS estimates. *** p<0.01, ** p<0.05, * p<0.1 based on cluster-robust standard errors. Party-period fixed effects included. The # symbol denotes interaction.

Appendix F. Testing for biases in estimates due to heterogenous treatment effects

Many of the models estimated in this paper use both individual and time fixed effects. Such two-way fixed effects models are commonly used in the literature but can lead to misleading estimates if the treatment effects are not constant between groups and over time (De Chaisemartin and D'Haultfoeuille, 2024), i.e., if the 'constant treatment effects assumption' is violated. This issue is especially pertinent in settings in which most units receive varying amounts of treatment (i.e., non-binary treatment) at different times.

The field is still debating how to best deal with this issue, focusing on solving it in a differences-in-differences setup. In such a setup, violation of the constant treatment effects assumption may give some treated groups in some periods so called 'negative weights'. These can imply, in extreme cases, that a treatment that in reality has a positive impact on some outcome variable is given a negative coefficient. A definite approach on how to deal with this issue has not been found yet, but some tools to gauge the size of the problem and ways to solve it using a more robust estimator are being developed (e.g., De Chaisemartin and D'Haultfoeuille, 2022; Roth et al., 2023).

In this Appendix, we explore to what extent a violation of the constant treatment effects assumption leads to different results. Table F1 provides coefficient estimates using a model that is more robust to a violation of the constant treatment assumption.[1] Note

[1] This is implemented using the Stata command did_multiplegt. The results are robust to heterogeneous effects and to dynamic effects. See De Chaisemartin and D'Haultfoeuille (2024).

that, with this model, we are not able to exactly replicate the models we estimate in the main analysis.[2] Also note that this Appendix only replicates the regressions displayed in Table 4 in the paper. The regressions on which Table 3 is based are not included because there is no clear treatment variable. In the other models, we use multi-way interactions, and, to our knowledge, there is not yet a module that can estimate such regressions in a way that is robust to heterogeneous treatment effects.

Table F1 show that the main results do not change. Coefficients are mostly insignificant and always too small to have a substantial effect.

Table F1
(to be compared with Table 4): Regression results: influence of the average ideological profile of the municipal council on local taxes

	(1)	(2)	(3)	(4)	(5)
	Tax levels			Tax distribution	
	Property tax revenue per capita (euro)	Average property tax for homeowner (euro)	Average municipal tax bill for homeowner (euro)	Percentage of property tax revenues levied on residential property	Municipal tax bill of a renter as a percentage of the tax bill of a homeowner
Right-wing	5.0	7.7	4.6	−0.3	−0.9
Preference for economic equality	−2.9	−8.1	6.7	−0.1	1.6
Preference for markets and efficiency	−11.9	3.7	33.1	−1.8	1.2

Note: These results are robust to heterogeneous effects and to dynamic effects. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Every column displays the results of three separate regressions.

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[2] Control variables are implemented differently, standard errors are calculated using a block bootstrap, and the composition of the treatment group is adjusted. For details, see De Chaisemartin and D'Haultfoeuille (2024).

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