

This file was downloaded from BI Open Archive, the institutional repository (open access) at BI Norwegian Business School <http://brage.bibsys.no/bi>.

It contains the accepted and peer reviewed manuscript to the article cited below. It may contain minor differences from the journal's pdf version.

Mahieu, B., Geys, B., & Heyndels, B. (2017). Fiscal fairness as a political argument. *Kyklos*, 70(4), 622-640 DOI: <http://dx.doi.org/10.1111/kykl.12151>

Copyright policy of *Wiley*, the publisher of this journal:

Authors are permitted to self-archive the peer-reviewed (but not final) version of a contribution on the contributor's personal website, in the contributor's institutional repository or archive, subject to an embargo period of 24 months for social science and humanities (SSH) journals and 12 months for scientific, technical, and medical (STM) journals following publication of the final contribution.

<http://olabout.wiley.com/WileyCDA/Section/id-817011.html>

Fiscal fairness as a political argument

Bram Mahieu^{*}, Benny Geys[#] and Bruno Heyndels[&]

Abstract:

Governments typically apply several tax instruments. The tax choice literature sees the choice among these as depending on the political costs involved. One source of such costs is (horizontal) inequity in the distribution of the tax burden. In this article, we provide the first empirical test of the question whether, and to what extent, such inequity affects tax choices. Using data on housing sales and tax policy in Flemish municipalities, we create an indicator for the inequity of the local property tax. The latter is levied on the property's assessed rental value, and its inequity is a by-product of the slow reassessment procedure leading to a situation where properties of identical value are taxed (very) differently. We find clear evidence that municipalities in which property taxation is more inequitable tend to rely less on this tax as a source of municipal revenue.

Keywords: Fairness, equity, tax policy, tax structure, local government.

Word count: 7069 words (anon)

^{*} Research assistant, Vrije Universiteit Brussel (VUB), Department of Applied Economics, Pleinlaan 2, B-1050 Brussel, email: Bram.Mahieu@vub.ac.be

[#] Professor, Norwegian Business School BI, Department of Economics, Nydalsveien 37, N-0442 Oslo, Norway, email: Benny.Geys@bi.no, and Vrije Universiteit Brussel (VUB), Department of Applied Economics, Pleinlaan 2, B-1050 Brussel, email: Benny.Geys@vub.ac.be

[&] Professor, Vrije Universiteit Brussel (VUB), Department of Applied Economics, Pleinlaan 2, B-1050 Brussel, email: Bruno.Heyndels@vub.ac.be

I. INTRODUCTION

Both normative and positive analyses of taxation attribute a crucial role to fairness. Ever since Adam Smith introduced his normative *maxims* of taxation, it has been recognized that a “good” tax system should be fair. From a positive perspective, the history of taxation is replete with examples of how (perceived) unfairness led to political upheaval. The English peasants’ revolt of 1381 and the French peasants’ revolts in 1542 and 1548 are known examples. More recently, we could recall the commotion following the introduction of the Poll Tax in the United Kingdom in 1989-1990, which ultimately caused the downfall of Margaret Thatcher (Gibson, 1990).

As a rule, it is expected that unfair taxes entail important political costs, which rational politicians can minimize by avoiding these taxes. While there is by now a very large literature identifying political costs of taxation and how these shape tax systems (for reviews, see Hettich and Winer, 1999; Kenny and Winer, 2006), to our knowledge not a single study systematically analyzes how (un-)fairness of a tax influences political decision-making. We aim to fill that gap. Local taxation in Flanders thereby provides a particularly interesting case. First, it revolves predominantly around two ‘competing’ tax bases (i.e. income and property), where taxes on the latter are more unfair and perceived to be so by the electorate (more details below). Second, local authorities enjoy broad fiscal autonomy, thus giving them the possibility to shift taxation away from more toward less unfair taxes. Both elements together create an ideal setting to study whether politicians shift taxation away from taxes that are perceived to be more unfair (here: local property tax) towards taxes that are perceived to be less unfair (personal income tax).

The local property tax is levied on the assessed rental value of a property. Despite a legal framework, the re-assessment of the rental values of properties - which is a responsibility of the Belgian federal government - has been postponed over and over again. The most recent general re-assessment dates back to ... 1979. It should not come as a surprise then that currently used assessed rental values are not accurate at all. Properties of similar value are taxed differently, implying a textbook case of horizontal inequity. The failure to reassess property values thus provides a unique natural experiment to test the implications of the political costs involved in horizontal fiscal inequity.

While the definition of the property tax base is exogenous to the Flemish municipalities (as it is the federal government’s responsibility), municipalities are free to choose the tax *rate*. Moreover, they enjoy important autonomy in levying other taxes. Hence, we expect that if there

are important political costs related to the - exogenously driven - unfairness in the property tax, local governments will choose to raise fiscal revenues through other sources. After a brief discussion of the literature on tax inequity and tax choice (section 2), we first demonstrate that the degree of inequity differs between Flemish municipalities (section 3). Then, in section 4, we look at tax policies in all 308 Flemish municipalities and test whether the unfairness affects the choice between the different tax instruments available to local governments. We find clear evidence that inequity matters: local governments systematically move away from local property taxes if the underlying tax base is more inequitable.

II. TAX INEQUITY AND TAX CHOICE

The positive analysis of taxation initiated by Downs (1960) considers tax systems as the result of decision-making by vote-maximizing politicians. The standard model in the tax choice literature is by Hettich and Winer (1984, 1988, 1999), and consists of two interrelated phases.¹ First, the government determines the *level* of taxation by equalizing the marginal (political) costs of taxation to the marginal (political) benefits of the public expenditures that are possible thanks to the tax revenues. In a second step, a decision is taken on the tax *structure*. In equilibrium, revenues come from different taxes in such a way that marginal political costs among tax instruments are equalized.

In both phases of the Hettich and Winer model (marginal) costs and benefits are political, or more precisely: electoral. Voters' appreciation of, and responses to, taxation are as such shaping the tax system. Taxes with high political costs are avoided. Whether or not taxes may have economic (incentive) costs is only of secondary importance. There is by now a large empirical literature supporting Hettich and Winer's model of electorally driven tax systems (Ashworth et al., 2006; Geys and Revelli, 2011; Revelli, 2013; Profeta et al., 2014; Ferde et al., 2015).

One of the criteria by which the electorate evaluates (potential) taxes is their fairness. Already in *The Wealth of Nations*, Adam Smith identified equity as a major *maxim* of taxation (Smith, 1776 [1976], 825). It is not highly controversial to repeat Smith's claim today and state that tax systems should be fair. This unanimous claim that taxes should be fair contrasts sharply, however, with the complete lack of unanimity when it comes to making explicit what this

¹ The Hettich and Winer model formalizes the central idea similarly brought forward in Hansen (1983) and Rose and Karran (1987). In all three models, the electoral cost of taxation is pivotal. Hansen (1983) and Rose and Karran (1987), however, include a wider set of determinants of tax policy making.

fairness implies. If only to organize the debate, it has been proven meaningful to distinguish between horizontal and vertical equity (Musgrave and Musgrave, 1989; Steinmo, 1998). Horizontal equity refers to the normative criterion that equals should be treated equally. Vertical equity typically implies that taxation should be according to ability to pay. Needless to say that ideological debates center around the latter concept. For most observers, however, horizontal equity is a natural objective of taxation. Whatever one's view on fairness, the claim that equals should be treated equally seems self-evident. The positive implication of this is that horizontally inequitable taxes have high political costs and will therefore – following the Hettich and Winer logic – be avoided as much as possible. That inequity of a tax can bring along a high political cost is clear from the examples given in the introduction to this paper. In more general terms, it has been shown that fairness of government intervention shapes voters' preferences. Policy measures that are perceived to be fair are more likely to obtain voters' approval (Stix, 2013), 'fair' fiscal consolidations tend to be more successful (Kaplanoglou, Rapanos and Bardakas, 2015) and – in the case of taxation – voters' attitudes are driven by fairness considerations (Hennighausen and Heinemann, 2015).

III. PROPERTY TAXES IN FLEMISH MUNICIPALITIES: INTER- AND INTRA-MUNICIPAL (HORIZONTAL) INEQUITY

Flemish municipalities have two main sources of revenue: grants from higher level governments and local taxation. They have – to international standards – a relatively high autonomy over their tax policy and the kinds of taxes to use. Consequently, the local tax system is characterized by a large diversity: the average Flemish municipality levies about 20 different taxes. Most of these are very modest in terms of the revenue raised. About 80 % of Flemish municipalities' tax revenues is collected through two taxes: the local income tax (LIT) and the local property tax (LPT).² It is this LPT that is at the center of our analysis for reasons explained in more detail below. Both LIT and LPT are surcharges. Whereas the LIT is a percentage of the Federal income tax, the LPT is calculated as a fraction of the regional property tax. The latter is a tax on the *assessed net-rental values* (ANRV) of properties.³ While the tax is regional, the assessment of these net rental values is a federal responsibility.

² For a list of abbreviations of key variables, see Table A.1 in appendix A.

³ Apart from the municipalities, also the provinces tend to raise revenue through a (typically much smaller) surcharge on the regional property tax.

An example may clarify the calculation of the property tax bill and tax burden: the Flemish (regional) property tax rate in 2015 equals 2,5% of the ANRV. Let us consider a house with a current sales price of 282.000 euro and an ANRV of €1000 situated in Mechelen (note that ANRV's are yearly rental values expressed in 1975-prices), a medium-sized Flemish city. The Flemish property tax of 2,5% on the ANRV of €1000 gives a tax bill of €25 for the owner. Apart from the Flemish government, also the municipality (here: Mechelen) and the province (here: Antwerp) levy a surcharge proportional to the Flemish property tax. In Mechelen the local property tax rate in January 2015 was 1550 per cent of the Flemish property tax, meaning that the house owner would have to pay a tax of 15,5 times €25 or €387,5 to the municipality. The fact that the municipal taxes are much larger than the regional tax on which it is based is most common in Flanders. Ignoring the provincial property tax, the owner would receive a tax bill of €412,5 (=25+387,5) for the house with a sales price of 282.000 euro. For this owner, the property tax burden, expressed as a percentage of the current sales price, would be a yearly 0,146% (=412,5/282.000).

Horizontal equity implies that two properties with an identical (rental) value have an identical ANRV and therefore that taxes based on these ANRVs are identical. Flemish reality is, however, very different. Properties with identical (rental) value often do not have the same or even similar ANRVs. The reason is that assessments have not been systematically updated over time. Recognizing that property (rental) values change over time depending on maintenance or renovation, on changes in local market conditions, on urban development, and so on, federal legislation specifies that property values should be re-assessed every 10 years. However, as this re-assessment is very costly and expected to be electorally unrewarding, several Federal governments have decided to postpone it. The result is that today the most recent general re-assessment dates back to 1979. Only newly built properties or properties that were renovated drastically (and for which the renovation was formally registered) have a more recent ANRV-tag attached.

Mahieu et al. (2012, 2014) document this situation for the Flemish Region based on an in-depth analysis of over 34.000 sales of 'closed and semi-detached private residences' in 2010.⁴ Properties' ANRVs typically do not reflect (or correlate with) the rental or sales value (SP) of

⁴ The tax administration distinguishes (1) closed or semi-detached private residences ('*gewone woonhuizen*'), (2) detached private residences ('*villa's, bungalows en landhuizen*'), and (3) residential units of a larger estate ('*apartments, flats and studio's*'). Category 1 has by far the largest share in the sales (50.903 sales in 2010), followed by apartments (22.629 sales in 2010).

houses. It is by no means exceptional that for two identically valued houses (as measured through their sale prices) the ANRV - and thus property taxes owed - of one property is three to four times larger than that of the other. While the *average* ANRV/SP ratio in 2010 equals 3,54 (where the SP is expressed in €1000) and is – as a rule – independent of the price segment considered, the postponement of re-assessments after 1979 shows itself in the observation that ANRV/SP-ratio for *individual* houses often deviates considerably from this average (Mahieu et al., 2012).⁵ This variation captures the horizontal inequity in our analysis.

It should be noted that while the variation in ANRV/SP ratios has both an inter- and intra-municipal component, from a municipal perspective only the latter implies inequity.⁶ Discrepancies between fiscal and actual values of properties differ both among and within municipalities. Consider first inter-municipal differences in the ANRV/SP-ratio. Properties in municipalities that have become more attractive over time (because of favorable labor market conditions, attractive local public policy, ...) will have witnessed a relative increase in value. As ANRVs have not changed, higher housing prices imply a lower ANRV/SP-ratio in these areas. In addition, intra-municipal divergences in the ANRV/SP ratio of individual properties occur. These may be attributed to biases in the initial (1979) assessment exercise. There is a large literature documenting such biases (Lin, 2010). Of course, in a long-term perspective where assessment has not taken place for over 30 years, divergences will reflect that *within* the municipality properties have ‘evolved’ differently. The evolution of property values will reflect differential histories of neighborhoods and/or differential maintenance of individual houses. Lacking re-assessment then implies that intra-municipal divergence in the ANRV/SP ratio will occur.

Focusing exclusively on the municipal level, it should be clear that only *intra*-municipal divergences are an issue. Indeed, the municipal tax rate can be expected to neutralize *inter*-municipal differences in ANRV/SP ratio. Municipalities where ANRV/SP ratios are low can compensate this by setting higher local tax rates, leading to similar/identical taxes paid by owners of equal-valued properties in the different municipalities.⁷ If this is the case, then there

⁵ Returning to our example for Mechelen introduced above, a sales price of 282.000 euro and an assessed net rental value of 1.000 euro would generate a ANRV/SP of 3,55 (=1000/282).

⁶ Of course, as will become clear, inter-municipal divergence in ANRV/SP ratios will create horizontal inequity at the level of the provincial surcharge and, of course, the regional tax on the ANRV.

⁷ To illustrate, consider two otherwise identical houses (meaning: they had the same market value – and thus ANRV - in the reference year 1979 and they were maintained and/or renovated to the same extent over time)

will be no horizontal inequity in the municipal tax. From a tax choice perspective, however, it could be expected that the compensation of such differences are only partial. Indeed, as the size of the tax base has been identified as a major determinant of the political costs of taxation (Hettich and Winer, 1999), larger ANRV values may lead local governments to rely more readily on the local property tax. Higher housing values on the other hand may imply an income effect leading governments to rely on local income taxation.

The situation is different with respect to intra-municipal divergences in ANRV/SP value. In that case, two properties with the same market value may have (highly) different ANRVs. As taxes are proportional to these values, owners will thus have to pay a different amount of local taxes. As such, a horizontal inequity is introduced (exogenously), which municipalities can in no way remedy other than by not relying on this specific tax instrument.

Figure 1 documents inter- and intra-municipal variation in the ANRV/SP ratios for Flanders in 2010.⁸ Inter-municipal divergences are summarized in the left-hand panel of figure 1, which maps the distribution of the average ANRV/SP ratio by municipality for all 308 Flemish municipalities. It is clear that this ratio differs considerably across jurisdictions. More specifically, we find that the ratio in some municipalities barely exceeds two, while in others it is larger than five. In other words, municipalities setting an identical LPT-rate would collect over 2.5 times as much revenues in the latter municipality.

Figure 1

located in different municipalities A and B. If market conditions in municipality A have been more favorable, we expect housing prices in A to have increased over time relative to prices in B. Hence, houses in A will tend to have a lower ANRV/SP ratio. If this applies to all houses in A then the implication is that – for it to raise an amount of taxes equal to that raised in B – the local government in A will have to set a lower tax rate. Property owners in A then pay a lower tax rate, but an equal amount of local taxes.

⁸ To find out to what extent horizontal inequity is present in each of the 308 Flemish municipalities, we use the dataset from Mahieu et al. (2012). This dataset was retrieved from the Federal Ministry of Finance in July 2011. It contains for 2010 in total 53.613 transactions of *gewone woonhuizen*, of which 34.742 were considered valid for further analyses (for more detail, see Mahieu et al., 2012). We consider data on sales in the price classes from €150.000 till €350.000, which gives us 26.455 transactions (or 76,15% of the total). We aggregate these data of individual sales for each of the Flemish municipalities.

Intra-municipal differences in the ANRV/SP ratio are considerable too. To get a general indicator of this (latent) inequity in each municipality, we calculate the coefficient of variation – the ratio of the standard deviation to the average – of the ANRV/SP ratio using data on all properties sold. In an “ideal” situation, the coefficient of variation equals 0.⁹ This would imply that houses with identical market value have identical ANRVs. Higher values for the coefficient of variation reflect a wider dispersion of the ANRV/SP values. The coefficient of variation thus indicates the extent to which properties with similar sales prices have different ANRVs and are taxed differently. The right-hand panel of Figure 1 maps this indicator of intra-municipal inequity for all 308 Flemish municipalities. If we ignore one outlier at a value of 0,03¹⁰, the coefficient of variation ranges from 0,20 to 0,56. This clearly indicates that intra-municipal divergence in ANRV/SP ratios are considerable and, crucially, that this intra-municipal divergence differs significantly between municipalities. The latter implies that the inequity brought by using the LPT differs among local governments.

IV. EMPIRICAL ANALYSIS

Drawing upon the political-economic literature discussed in section 2, we expect that municipalities where horizontal inequity of the LPT is larger make less use of this tax as policy makers will look for alternative sources of tax revenue. As mentioned before, the local income tax (LIT) often provides the most realistic alternative since it – just like the LPT – has a sufficiently broad tax base to generate major revenues. As such, our empirical analysis will employ the share of different taxes in total municipal tax revenues (i.e., LPT, LIT and remaining taxes) as dependent variables, and assess whether the share of property tax revenues is reduced when horizontal inequity of the LPT is higher. The tax policy data derive from the Research Centre of the Flemish Government, which collects and publishes this information on an annual basis.

The easiest specification of this system of three reduced-form equations can be written as follows (we drop indices for the municipalities not to overload notation).¹¹

⁹ Note that we make use of the empirical observation that the ANRV/SP ratio tends to be independent of price segment (Mahieu et al., 2012).

¹⁰ This outlier concerns the municipality of Mesen, a small municipality with only two sales included in our dataset.

¹¹ 307 of the 308 Flemish municipalities were retained in the analysis. Herstappe is not included as not a single sale was registered in our dataset for that municipality.

$$RevShare = a + b \cdot VCOEF \left(\frac{ANRV}{SP} \right) + c \cdot MEAN \left(\frac{ANRV}{SP} \right) + d \cdot Controls + e$$

where *RevShare* is a set of three dependent variables representing, respectively, local property tax revenues, local income tax revenues and other tax revenues as a share of total tax revenues. We estimate these three equations jointly as fiscal revenues from different sources are clearly jointly determined. Moreover, as these tax revenue shares sum to 1, the joint estimation of all three equations will naturally imply that coefficient estimates across the three equations must sum to 1 (since we include the same set of control variables in all three equations). Our main explanatory variable is $VCOEF(ANRV/SP)$, which is the coefficient of variation introduced in section 3. Following the developed arguments, we expect that $b < 0$ in the equation with the share of local property tax revenues as the dependent variable, and $b > 0$ in at least one of the other two equations.

As explained in section 3, *inter-municipal* differences in $ANRV/SP$ could be expected to lead to a compensating difference in the local property tax rate. This relation is not driven by a sense of (un)fairness, but a simple budgetary argument: a higher (lower) municipal tax rate neutralizes the fact that the municipality concerned has – in comparison with other Flemish municipalities – on average a lower (higher) tax base. Only if this compensation through tax rates is perfect, the *inter-municipal* differences in $ANRV/SP$ will be neutral to the shares of the respective tax instruments. There are, however, theoretical arguments as to why such compensation would be imperfect. It may be the case that taxpayers evaluate politicians on the basis of tax rates rather than the actual amount of taxes paid. While such an approach might seem irrational at first (as rational agents should be expected to care about the amount of taxes paid, not the statutory rates), it should be recognized that comparing tax rates across municipalities is – given that the LPT is a single rate surcharge – very simple whereas comparing the amount of taxes paid involves information on tax bases that is not readily available, nor easy to collect. As a result, the focus on tax rates is well established both in the media, political practice and academic research (Heyndels and Vuchelen, 1998). If voters focus predominantly on tax rates, then we would expect that political costs of raising a given amount of revenue are negatively related to the size of the tax base. Larger $ANRV/SP$ values would then imply more reliance on the LPT as a revenue source and we would expect $c > 0$ in the equation explaining the share of local property taxes and negative in at least one of the other equations.

In the previous argument, larger ANRV/SP values were (implicitly) taken to reflect larger ANRV values (and property tax base). Clearly, larger ANRV/SP values may also reflect lower housing prices. If that is the case, then higher ANRV/SP values might refer to lower wealth in the municipality. As wealth can be expected to correlate with income, this may indicate a relatively small income tax base. Hence, whereas in the former case the choice for using the LPT is driven by the larger size of the property tax base, in the latter case it is driven by the smaller size of its most realistic alternative: the income tax base. The empirical implication is that in the former case, a positive effect of ANRV/SP ($c > 0$) for the equation explaining the share of local property taxes will be compensated by negative effects in both other equations, whereas in the latter case the compensation will occur mainly through the local income taxes. We return to this below.

Finally, we include an extensive set of control variables: i.e. the (log of) population size, the share of young (under 18) and elderly (over 65) inhabitants, average income per capita, the number of firms registered in the municipality (per capita), the ideological leaning of the local government (measured as a weighted average ideological position of the coalition parties on an 11-point Left-Right scale), the effective number of parties in the local parliament (in which each party is weighed by its number of seats in the local parliament), and the share of inhabitants renting their house (in the year 2001). Inclusion of these variables strengthens the *ceteris paribus* conditions in our analysis, although qualitatively similar results are obtained when these controls are excluded (or only statistically significant controls at conventional levels are retained).

4.1 Main Results

Table 1 summarizes the results of the empirical analysis. The table is composed of three panels, summarizing the regression results on the tax share equations for local property taxes, local income taxes and other taxes respectively. Two main sets of results are provided. In columns (1) and (2), we estimate the model using VCOEF (ANRV/SP) and the average value of ANRV/SP as the central independent variables. In columns (3) and (4), we split the latter variable up in its component parts to verify the underlying mechanisms of the observed effects. In each case, we present one set of results on the complete set of available observations (columns (1) and (3)), and a robustness check including only municipalities with more than 10

registered sales in 2010 (columns (2) and (4)). Coefficients on the control variables are reported in the full tables in appendix A.¹²

Table 1

The results in table 1 show a clear and uniform tendency: Flemish municipalities do take the intra- and inter-municipal differences (inequity) in the ANRV/SP ratio into account when shaping their tax policy.

Intra-municipal differences in ANRV/SP – which indicate the level of horizontal inequity in the local property tax – as measured by VCOEF show a significant negative relation to the relative weight of the local property tax as a source of fiscal revenues for the local authorities (see panel I). Local politicians give preference to a larger use of the local income tax in cases of higher (horizontal) inequity of the local property tax (see panel II). The coefficient estimates are statistically significant at the 95% confidence level or better throughout all estimations in panels I and II of table 1. Although our inferences are limited to one particular case within a specific context, these results are very important. They indeed represent what is to our knowledge the first evidence on the political-economic hypothesis that tax policy and the tax structure are a function of the horizontal inequity of the tax base. Policy makers avoid (horizontally) inequitable taxes.

The inter-municipal differences in the ANRV/SP ratio appear to influence local fiscal policy as well. Municipalities where the average ANRV/SP ratio is relatively high make *more* use of the local property tax. This goes against the argument that local governments compensate for higher ANRV/SP ratios by lowering local property tax rates (as this suffices to collect a given tax revenue). Such compensation thus proves to be partial at best. In line with the predictions of the standard model of tax structure determination (Hettich and Winer, 1984, 1988, 1999), a

¹² These results indicate that higher income levels and a higher share of renters (rather than owner-occupiers) increase reliance in income tax revenues and decrease the share of property tax revenues. The reverse holds for the number of firms registered in the municipality. Increased political fragmentation of the local council and a stronger right-wing orientation of the local government are associated with increased reliance on incomes taxes and less on property taxes. Population size tends to increase reliance on property taxation somewhat, but generally leaves the share of income and other tax revenues unaffected. Finally, population composition (in terms of the share of elderly and young inhabitants) displays a positive association with the share of property taxes, but depresses incomes tax reliance (for the share of elderly) and other taxes (for the share of young inhabitants).

higher tax base – as materialized in higher ANRV values – ‘lowers the associated tax instrument’s marginal cost function and increases the relative reliance on that instrument’ (Geys and Revelli, 2011, 417). If higher values of the ANRV/SP ratio rather reflect lower property sales prices, this may be taken to indicate a smaller local income tax base, thus also offering an argument to draw on the richer – LPT – tax base. To assess the empirical relevance of this line of argument, columns (3) and (4) include the average values of ANRV and SP separately.

This alternative specification first of all leaves our findings with respect to the effect of VCOEF (ANRV/SP) unaffected. It still statistically significantly reduces the property tax share and increases the income tax share. Moreover, the coefficient estimates for the average values of ANRV and SP are consistent with the idea that these variables pick up tax base effects. A higher average ANRV lowers the marginal electoral cost of the property tax (Geys and Revelli, 2011), which makes the property tax a more interesting fiscal instrument (and the income tax a less appealing one). Instead, a higher average sales price – which is associated with a lower marginal cost of the income tax – increases the income tax share and reduces the property tax share.

4.2 *Robustness analysis using tax rates*

In this section, we replicate the analysis above using property and income tax *rates* rather than tax revenue *shares* as the central dependent variables.¹³ Although the main theoretical predictions refer to the extent to which specific revenue sources are employed by local governments – and thus suggest tax revenue shares as the optimal dependent variables – these outcomes are likely to be reflected in the fiscal decisions made with respect to the level of tax rates. Moreover, as discussed earlier, voters may – to save on information costs – base their evaluation of public policy on tax rates rather than the amounts of taxes paid. Electoral costs of taxation would then be more sensitive to rates than to the tax revenues. Hence, we would also expect that a larger intra-municipal horizontal inequity in the base of the local property tax puts downward pressure on the local property tax rate. The results from estimating a system of two

¹³ The analysis here is constrained to property and income tax rates since these are the only two major revenue sources where tax rates are comparable across municipalities. Both taxes involve only one tax rate at the local level, whereas other taxes generally have more complicated tax rate schedules. Moreover, their tax bases are determined by a higher-level government, whereas other local taxes often involve significant differences in the tax base. Note also that we exclude four outliers where the local income tax rate is set at 0% (3 cases) or 1% (1 case) to improve the precision of the estimation procedure.

seemingly unrelated regressions (SUR) – one for the property tax rate and one for the income tax rate – are provided in table 2 (using the same format as table 1).

Table 2

The results in table 2 provide broad confirmation that the fiscal effects observed in table 1 are also reflected in local governments' tax rate decisions. Specifically, larger horizontal inequity in the local property tax base is reflected in lower property tax rates. The effect is statistically significant at the 90% confidence level or better in three out of four estimations. While we also observe a consistently positive point estimate for the income tax rate, this fails to reach statistical significance at conventional levels in most cases. The average ANRV/SP ratio, as well as higher values of its constituent parts, are associated with lower tax rates. Although we lacked specific theoretical predictions concerning these variables, these observations are likely to reflect the fact that lower tax rates suffice to collect a certain amount of tax revenue when the tax base (and general wealth level within the municipality) is high.

V. CONCLUSION

As in many other countries and regions, Flemish local governments have the authority to levy a variety of taxes. The property tax is one of the two predominant ones. It is a surcharge on the regional property tax. The tax base consists of properties' assessed net rental values (ANRV), which were supposed to be updated every 10 years. However, due to the enormous investment in time and money that this operation would require, there has not been a general reassessment since the original establishment in 1979. The protracted postponement of the reassessment led to an increasing discrepancy between the fiscal and the actual value of a property. The ANRV is no longer a good indicator of the sales price (or rental value; SP) of a property. In other words, the ANRV/SP ratio differs considerably between houses. As a result, houses with a similar price are taxed differently, which clearly undermines one of the preconditions for a good (and fair) tax: i.e. horizontal equity.

Regression analyses demonstrate that this horizontal inequity encourages local administrations to rely less on property taxes and rather resort to a more important use of the local income tax,

where horizontal inequity can safely be assumed less problematic. Our empirical analysis thus supports that the horizontal inequity of a tax erodes the weight of this tax in the actual tax structure. This is in accordance with the model of Hettich and Winer (1984, 1988, 1999), which argues that electoral costs (in our case, the electoral cost of horizontal inequity) guide tax policy. To our knowledge, this is the first empirical test of this hypothesis in the extant international literature. The relevance and implications of our findings for policy makers are unmistakable. A further delay in the general reassessment of the ANRV values will most likely further erode the link between ANRVs and value of a house. In the long term, the ANRV will evolve towards an arbitrary value independent of the value of the taxed property. The horizontal inequity would aggravate. This has major implications for local tax policy. One of the main sources of fiscal revenue of municipalities risks losing a socially and politically acceptable tax base and as a result, risks becoming useless.

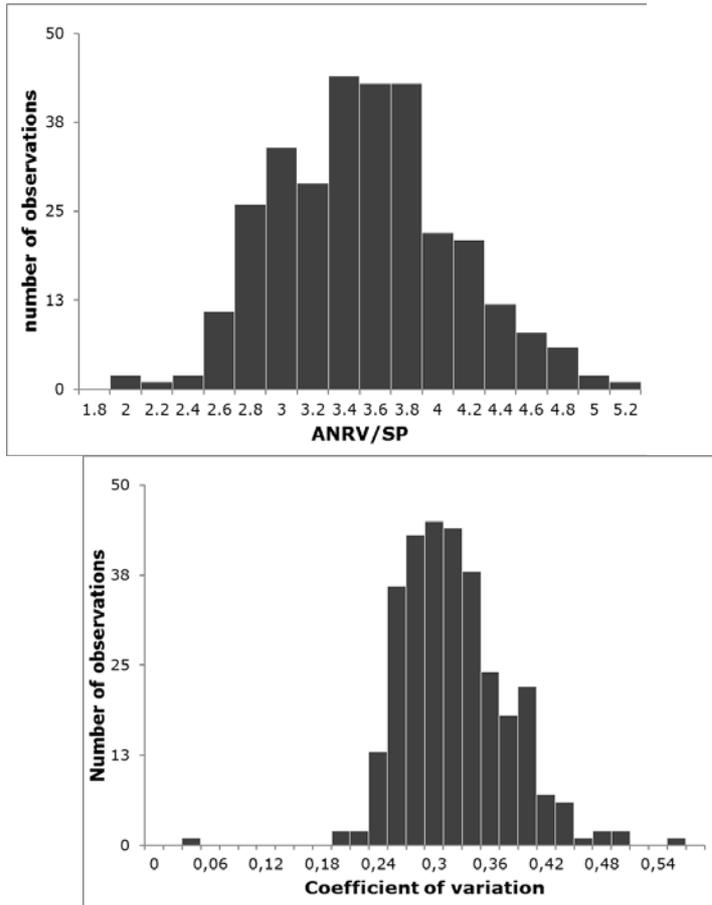
From a political-economic point of view, an interesting question concerns the feasibility of a general reassessment and – along with that – the optimal set-up of such an operation. Normative-theoretically, the situation is clear: if policy-makers want to turn the local property tax into a more equitable tax, a reassessment of the ANRVs (or a switch to a completely new system) is urgent and indispensable. Positive-theoretically, the case is more complicated. After all, it touches the essence of the analysis of Rose and Karran (1987): any reassessment or system switch would imply that some taxpayers (who paid ‘too little’) would have to pay more and others (who paid ‘too much’) would have to pay less. The political consequences would be asymmetrical: those who gain are satisfied, but moderately; those who lose are very unhappy and could punish policy-makers in the voting booth. Tax policy inertia can for that reason be a rational policy option in the short run. The long run consequences (of ever-growing inequity) are more problematic. Even then, sustaining an inequitable tax can be politically more rewarding than dealing with this inequity: ‘By sustaining familiar taxes, inertia tends to make taxation politically acceptable, or at least less unacceptable. (...). Familiarity tends to increase acceptance, if only by a process of resignation’ (Rose and Karran, 1987, 7). In any case, a switch to a more equitable system would without any doubt be an extremely delicate political exercise.

REFERENCES

- Ashworth, John, Benny Geys and Bruno Heyndels (2006). Determinants of Tax Innovation: the Case of Environmental Taxes in Flemish Municipalities, *European Journal of Political Economy*. 22: 223-247.
- Downs, Anthony (1960). Why the Government Budget is Too Small in a Democracy, *World Politics*. 20: 541-563.
- Ferede, Ergete, Bev Dahlby and Ebenezer Adjei (2015). Determinants of statutory tax rate changes by the Canadian Provinces, *Economics of Governance*, 16: 27-51.
- Geys, Benny and Federico Revelli (2011). Economic and political foundations of local tax structures: an empirical investigation of the tax mix of Flemish municipalities, *Environment and Planning C: Government and Policy*. 29: 410-427.
- Gibson, John (1990). *The Politics and Economics of the Poll Tax. Mrs Thatcher's Downfall*, Warley: Emas Ltd.
- Hansen, Susan B. (1983) *The Politics of Taxation. Revenue without Representation*. New York: Praeger Publishers.
- Hennighausen, Tanja and Friedrich Heinemann (2015). Don't Tax Me? Determinants of Individual Attitudes Toward Progressive Taxation, *German Economic Review*, 16(3). 255-289.
- Hettich Walter and Stanley Winer (1984). A Positive Model of Tax Structure, *Journal of Public Economics*. 24: 67-87.
- Hettich Walter and Stanley Winer (1988). Economic and Political Foundations of Tax Structure, *American Economic Review*. 78 (4): 701-712.
- Hettich Walter and Stanley Winer (1999). *Democratic Choice and Taxation, a Theoretical and Empirical Analysis*, Cambridge: Cambridge University Press.
- Heyndels, Bruno and Jozef Vuchelen (1998). Tax mimicking in Belgian municipalities, *National Tax Journal*. 60: 89-101.
- Kaplanoglou, Georgia, Vassilis T. Rapanos and Ioanna C. Bardakas (2015). Does Fairness Matter for the Success of Fiscal Consolidation?, *Kyklos*. 68(2): 197-219.
- Kenny, Lawrence and Stanley Winer (2006). Taxation in the World: An Empirical Investigation of the Importance of Tax Bases, Collection Costs and Political Regime, *International Tax and Public Finance*. 13: 181-215.
- Lin, Tzu-Chin (2010). Property tax inequity resulting from inaccurate assessment – The Taiwan experience, *Land use Policy*. 27: 511-517.
- Mahieu, Bram, Bruno Heyndels, Junior Burssens, Stijn Goeminne and Carine Smolders (2012). Een analyse van de relatie tussen KI en woningprijzen in de Vlaamse centrumsteden, *Documentatieblad*. 72(2): 162-221.
- Mahieu, Bram, Bruno Heyndels and Benny Geys (2014). Fiscale onrechtvaardigheid als politiek argument in het belastingbeleid van de Vlaamse gemeenten, *Res Publica*. 56(2): 149-170.
- Musgrave, Richard A. and Peggy B. Musgrave (1989). *Public Finance in Theory and Practice*. McGraw Hill International Editions.
- Profeta, Paola, Simona Scabrosetti and Stanley L. Winer (2014). Wealth transfer taxation: an empirical investigation, *International Tax and Public Finance*. 21: 720-767.
- Revelli, Federico (2013). Tax Mix and Other Kinks, *Journal of Law & Economics*. 56(3): 741-775.
- Rose, Richard and Terence Karran (1987). *Taxation by Political Inertia*. London: Allen & Unwin.
- Smith, Adam (1776 [1976]). *An Inquiry into the Nature and Causes of the Wealth of Nations* Campbell R.H. and A.S. Skinner (Eds.). Oxford: Oxford University Press.

- Steinmo, Sven (1998). *Introduction*, in: Sven Steinmo (ed.), *Tax Policy, The international library of comparative public policy*. London: Edward Elgar Publishing.
- Stix, Helmut (2013). Does the Broad Public Want to Consolidate Public Debt? The Role of Fairness and Policy Credibility, *Kyklos*. 66: 102-129.

Figure 1: Distribution of ANRV/SP and coefficient of variation in ANRV/SP



Note: The left-hand panel in the figure depicts the number of municipalities with a given level of the ratio of assessed net-rental values over sales prices (ANRV/SP). The average ratio of 3,54 gives an assessed rental value of 354 euro per 100.000 euro in sales price (3,54x100). The right-hand panel depicts the number of municipalities with a given level of the coefficient of variation in the ratio of assessed net-rental values over sales prices (ANRV/SP), which indicates the level of intra-municipal horizontal inequity in the tax base of the local property tax. (N = 308 Flemish municipalities)

Table 1: Fiscal fairness and tax revenue shares in 304 Flemish municipalities, 2010

	(1)	(2)	(3)	(4)
	<i>Full sample</i>	<i>Minimum 10 sales</i>	<i>Full sample</i>	<i>Minimum 10 sales</i>
<i>Panel I: Share of property tax revenues in total revenues</i>				
VCOEF (ANRV/SP)	-0.169 *** (-2.58)	-0.218 *** (-3.16)	-0.150 ** (-2.29)	-0.198 *** (-2.88)
MEAN (ANRV/SP)	0.021 *** (2.80)	0.021 *** (2.72)	-	-
ANRV (in 1,000)	-	-	0.113 *** (3.35)	0.111 *** (3.25)
SP (in 100,000)	-	-	-0.094 *** (-3.10)	-0.089 *** (-2.91)
R ²	0.326	0.325	0.337	0.338
<i>Panel II: Share of income tax revenues in total revenues</i>				
VCOEF (ANRV/SP)	0.274 *** (3.22)	0.345 *** (3.86)	0.259 *** (3.03)	0.329 *** (3.67)
MEAN (ANRV/SP)	-0.014 (-1.40)	-0.013 (-1.30)	-	-
ANRV (in 1,000)	-	-	-0.069 (-1.56)	-0.065 (-1.48)
SP (in 100,000)	-	-	0.066 * (1.66)	0.061 (1.52)
R ²	0.419	0.426	0.421	0.429
<i>Panel III: Share of other tax revenues in total revenues</i>				
VCOEF (ANRV/SP)	-0.105 * (-1.74)	-0.126 ** (-1.98)	-0.109 * (-1.80)	-0.131 ** (-2.04)
MEAN (ANRV/SP)	-0.007 (-1.07)	-0.008 (-1.11)	-	-
ANRV (in 1,000)	-	-	-0.044 (-1.42)	-0.045 (-1.43)
SP (in 100,000)	-	-	-0.029 (-1.01)	-0.029 (-1.00)
R ²	0.296	0.297	0.298	0.299
<i>Controls</i>	YES	YES	YES	YES
N	307	302	307	302

Note: The dependent variable is the share of property tax revenues (Panel I), income tax revenues (Panel II) and other tax revenues (Panel III) in total revenues. $VCOEF(ANRV/SP)$ is the coefficient of variation in the ratio of assessed net-rental values over sales prices in a municipality (which indicates the level of intra-municipal horizontal inequity in the tax base of the local property tax). $MEAN(ANRV/SP)$ is the average value of the ratio of assessed net-rental values over sales prices in a municipality. ANRV is the average assessed net-rental value, while SP is the average sales price. All equations include controls for population size, age composition, income per capita, number of firms per capita, the ideological leaning of the local government, the effective number of parties in the local parliament, and the share of inhabitants renting their house. Observations are at the municipality level, and standard errors are reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table 2: Fiscal fairness and tax rates in 304 Flemish municipalities, 2010

	(1)	(2)	(3)	(4)
	<i>Full sample</i>	<i>Minimum 10 sales</i>	<i>Full sample</i>	<i>Minimum 10 sales</i>
	<i>Panel I: Property tax rate</i>			
VCOEF (ANRV/SP)	-387.010 * (-1.71)	-561.028 ** (-2.37)	-243.138 (-1.16)	-388.167 * (-1.77)
MEAN (ANRV/SP)	-247.234 *** (9.44)	-244.971 *** (9.30)	-	-
ANRV (in 1,000)	-	-	-845.116 *** (-7.81)	-820.170 *** (-7.57)
SP (in 100,000)	-	-	-263.498 *** (2.65)	-290.209 *** (2.92)
R ²	0.444	0.439	0.528	0.527
	<i>Panel II: Income tax rate</i>			
VCOEF (ANRV/SP)	0.721 (0.89)	1.125 (1.32)	1.095 (1.40)	1.568 * (1.90)
MEAN (ANRV/SP)	-0.444 *** (-4.76)	-0.427 *** (-4.51)	-	-
ANRV (in 1,000)	-	-	-1.335 *** (-3.31)	-1.249 *** (-3.06)
SP (in 100,000)	-	-	-0.942 ** (-2.55)	-1.035 *** (-2.76)
R ²	0.151	0.147	0.211	0.212
<i>Controls</i>	YES	YES	YES	YES
N	303	298	303	298

Note: The dependent variable is the property tax rate (Panel I) or income tax rate (Panel II). VCOEF(ANRV/SP) is the coefficient of variation in the ratio of assessed net-rental values over sales prices in a municipality (which indicates the level of intra-municipal horizontal inequity in the tax base of the local property tax). MEAN(ANRV/SP) is the average value of the ratio of assessed net-rental values over sales prices in a municipality. ANRV is the average assessed net-rental value, while SP is the average sales price. All equations include controls for population size, age composition, income per capita, number of firms per capita, the ideological leaning of the local government, the effective number of parties in the local parliament, and the share of inhabitants renting their house. Observations are at the municipality level, and standard errors are reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Appendix A

Table A.1: list of abbreviations of key variables (in order of appearance)

Variable	Description	Clarification
LPT	Local property tax	
LIT	Local income tax	
ANRV	Assessed net rental value	
SP	Sales price	
ANRV/SP	Ratio of the assessed net rental value on the sales price (sales price expressed in 1000 euro)	The average ratio of 3,54 gives an assessed rental value of 354 euro per 100.000 euro in sales price (3,54x100)
VCOEF	Coefficient of variation (the ratio of the standard deviation to the average of a variable)	A VCOEF = 0 indicates that there is no variation in the variable, VCOEF = 1 indicates that the standard deviation equals the mean of the variable.
VCOEF (ANRV/SP)	Coefficient of variation in the ANRV/SP ratio	A higher value indicates a larger variation in ANRV for similar valued properties (i.e. with a given sales price).

Table A1: Full results on fiscal fairness and tax revenue shares

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Full sample</i>	<i>Minimum 10 sales</i>	<i>Full sample</i>	<i>Minimum 10 sales</i>	<i>Full sample</i>	<i>Minimum 10 sales</i>
	<i>Panel I: Share of property tax revenues in total revenues</i>		<i>Panel II: Share of income tax revenues in total revenues</i>		<i>Panel III: Share of other tax revenues in total revenues</i>	
<i>Constant</i>	0.259 * (1.75)	0.271 * (1.75)	0.055 (0.29)	0.050 (0.25)	0.686 *** (5.04)	0.679 *** (4.75)
VCOEF (ANRV/SP)	-0.169 *** (-2.58)	-0.218 *** (-3.16)	0.274 *** (3.22)	0.345 *** (3.86)	-0.105 * (-1.74)	-0.126 ** (-1.98)
MEAN (ANRV/SP)	0.021 *** (2.80)	0.021 *** (2.72)	-0.014 (-1.40)	-0.013 (-1.30)	-0.007 (-1.07)	-0.008 (-1.11)
Income	-0.007 *** (-3.77)	-0.007 *** (-3.85)	0.009 *** (3.75)	0.009 *** (3.89)	-0.002 (-1.19)	-0.002 (-1.27)
Firms per cap	1.852 *** (6.51)	1.752 *** (5.96)	-1.344 *** (-3.64)	-1.199 *** (-3.16)	-0.508 * (-1.94)	-0.553 ** (-2.03)
Ideology	-0.015 *** (-2.86)	-0.014 *** (-2.59)	0.018 *** (2.62)	0.016 *** (2.31)	-0.003 (-0.58)	-0.002 (-0.44)
Effective number of parties	-0.007 (-1.28)	-0.007 (-1.35)	0.016 ** (2.36)	0.017 ** (2.44)	-0.009 * (-1.94)	-0.010 * (-1.94)
Share renting	-0.281 *** (-4.47)	-0.279 *** (-4.34)	0.590 *** (7.24)	0.584 *** (7.02)	-0.309 *** (-5.34)	-0.305 *** (-5.12)
Old	0.495 ** (2.09)	0.548 ** (2.24)	-1.100 *** (-3.59)	-1.219 *** (-3.85)	0.605 *** (2.78)	0.672 *** (2.97)
Young	0.616 ** (2.19)	0.642 ** (2.23)	0.242 (0.66)	0.185 (0.50)	-0.858 *** (-3.29)	-0.827 *** (-3.10)
(log) population	0.020 *** (2.92)	0.019 *** (2.68)	-0.012 (-1.36)	-0.011 (-1.17)	-0.008 (-1.25)	-0.008 (-1.26)
R ²	0.326	0.325	0.419	0.426	0.296	0.297
N	307	302	307	302	307	302

Note: The dependent variable is the share of property tax revenues (Panel I), income tax revenues (Panel II) and other tax revenues (Panel III) in total revenues. VCOEF(ANRV/SP) is the coefficient of variation in the ratio of assessed net-rental values over sales prices in a municipality (which indicates the level of intra-municipal horizontal inequity in the tax base of the local property tax). MEAN(ANRV/SP) is the average value of the ratio of assessed net-rental values over sales prices in a municipality. ANRV is the average assessed net-rental value, while SP is the average sales price. Observations are at the municipality level, and standard errors are reported in brackets: *** significant at 1%, ** at 5% and * at 10%.

Table A2: Full results on fiscal fairness and tax rates

	(1)	(2)	(3)	(4)
	<i>Full sample</i>	<i>Minimum 10 sales</i>	<i>Full sample</i>	<i>Minimum 10 sales</i>
	<i>Panel I: Property tax rate</i>		<i>Panel II: Income tax rate</i>	
<i>Constant</i>	2665.049 *** (5.15)	2444.732 *** (4.57)	10.001 *** (2.96)	9.457 *** (4.91)
VCOEF (ANRV/SP)	-387.010 * (-1.71)	-561.028 ** (-2.37)	0.721 (0.89)	1.125 (1.32)
MEAN (ANRV/SP)	-247.234 *** (9.44)	-244.971 *** (9.30)	-0.444 *** (-4.76)	-0.427 *** (-4.51)
Income	-27.501 *** (-4.23)	-28.480 *** (-4.39)	-0.041 * (-1.76)	-0.039 * (-1.67)
Firms per cap	306.187 (0.31)	-139.303 (-0.14)	-10.462 *** (-2.98)	-9.483 *** (-2.60)
Ideology	-102.978 *** (-5.42)	-97.173 *** (-5.11)	-0.195 *** (-2.88)	-0.203 *** (-2.96)
Effective number of parties	-3.163 (-0.17)	-3.113 (-0.17)	0.047 (0.72)	0.050 (0.76)
Share renting	-245.827 (-1.12)	-161.511 (-0.72)	0.767 (0.98)	0.903 (1.12)
Old	2723.46 *** (3.24)	3165.282 *** (3.66)	-1.899 (-0.64)	-2.114 (-0.68)
Young	970.564 (0.98)	1169.000 (1.17)	2.327 (0.66)	2.221 (0.62)
(log) population	7.940 (0.34)	17.021 (0.70)	0.012 (0.13)	0.036 (0.42)
R ²	0.444	0.439	0.151	0.147
N	303	298	303	298

Note: The dependent variable is the property tax rate (Panel I) or income tax rate (Panel II). VCOEF(ANRV/SP) is the coefficient of variation in the ratio of assessed net-rental values over sales prices in a municipality (which indicates the level of intra-municipal horizontal inequity in the tax base of the local property tax). MEAN(ANRV/SP) is the average value of the ratio of assessed net-rental values over sales prices in a municipality. ANRV is the average assessed net-rental value, while SP is the average sales price. Observations are at the municipality level, and standard errors are reported in brackets: *** significant at 1%, ** at 5% and * at 10%.