Property tax incentives to divorce strategically

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Abstract

Purpose – The paper aims to examine the role played by property tax in influencing strategic decisions regarding marital separation and divorce in Italian municipalities.

Design/methodology/approach – The empirical analysis is conducted on a sample of 6,458 Italian municipalities by applying the ordinary least squares (OLS) and instrumental variables (IVs) approaches.

Findings – The estimation results show a small increase in marital separations and divorces as the difference between the municipal secondary and primary home tax rate increases. Specifically, an increase of 1‰ in the property tax rate differentials is accompanied by an increase of six marital separations and four divorces per 1,000 inhabitants.

Research limitations/implications – The main limitation of the analysis is that the strategic behavior of the married couple is inferred from econometric analysis with data aggregated at the municipal level. To investigate this phenomenon more precisely, it would be useful to have individual data collected by surveys on strategic divorce decisions due to property tax incentives.

Originality/value – This study contributes to the scant existing literature on the tax incentives for strategic divorce. It is the first study to empirically investigate the effects of property tax on separation and divorce decisions by investigating the Italian context. In Italy, a property tax was introduced in 1993, encouraging "false" divorces by spouses with a second home since the tax on the secondary home was set at a rate higher than that on the primary residence. Moreover, there were no tax deductions and no additional tax breaks on the secondary home, while they were established on the primary one. Higher property taxes and the absence of tax breaks on the secondary home may have encouraged a strategic behavior whereby many married couples filed for false separation and divorce in order to recover part of property tax rebates.

Keywords Divorce, Marital separation, Property tax, Italian municipalities

Paper type Research paper

1. Introduction

The decision to get divorced is influenced by changes in divorce laws (González and Viitane, 2009; Rasul, 2003, 2006; Stevenson, 2007), technological advances (Greenwood *et al.*, 2016), social (Kalmijn, 2007; Boertien and Härkönen, 2018) and economic factors (White, 1990; Burstein, 2007; Killewald, 2016; González-Val and Marcén, 2017), including taxes and subsidies (Dickert-Conlin, 1999; Fink, 2020). According to the neoclassical family model developed by Becker (1973, 1974), a person decides to end the marital union if the expected utility gains of getting divorced are greater than those of being married (Becker *et al.*, 1977; Becker, 1991). In this theoretical view, marital decisions are based on a simple economic calculus between the relative utility gains of staying married and those of remaining single

JEL Classification — H30, H31, J12

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(Procter, 2000). These expected gains may be changed by economic factors like the tax treatment of married couples and single individuals (Bargain *et al.*, 2022; Ilin *et al.*, 2022). Marriage decisions may in fact be affected by the so-called "marriage tax", which takes the form of a "marriage subsidy" or a "marriage penalty", depending on whether the couple pays less or more tax, respectively, when it is married than when it is separated (Myohl, 2022).

Many studies have analyzed the influence of personal income tax on marriage decisions due to the different tax treatments between married and single individuals (Alm and Whittington, 1999; Chade and Ventura, 2002, 2005). They have found that in many countries the income tax system is not neutral in creating penalties or rewards for marriage. Most of these studies concern the USA, where it has been found that the income tax penalizes marriage decisions and increases the divorce rate (Alm and Whittington 1995a, b, 1997, 1999, 2003; Fisher, 2013), also affecting the timing of marriage decisions by delaying them (Alm and Whittington 1995a, 1997; Sjoquist and Walker 1995). Recent empirical evidence provided by Myohl (2022) for Switzerland shows that the joint income tax reduces the probability of a couple being married by 10.6%. Fink (2020) finds for Germany that the income tax code generates benefits for couples that get married earlier.

The effects of the income tax on divorce have received less attention in the literature. Whittington and Alm (1997) were the first to analyze this issue empirically. They asserted that "if the existence of taxes decreases the amount of household consumption that the individual receives from married relative to divorced status, then the probability of divorce will increase. Conversely, higher consumption with marriage than with divorce decreases the probability of divorce" (p. 391). Their empirical analysis of the situation in the USA showed a small and statistically significant increase in the divorce elasticity when the marriage penalty increases. Moreover, they found that wives are more sensitive to divorce decisions when the income tax increases because they are often a "secondary" earner in the household, receiving a salary lower than that of the "primary" earner husband. Whittington and Alm (1997) show that, although the impact of the income tax on marriage dissolution is small, it is nonetheless interesting to analyze because it brings out dissimilarities in the gender roles within the married couple.

The existing empirical studies have focused mainly on the impact of income taxes on decisions to marry and divorce, neglecting the role played by property taxes in marital decisions. Property taxes can also affect the expected gains from marriage and divorce, thereby changing the probability of separation. The property tax regime can provide an incentive for married couples to legally separate if they get a reduction in the amount of property taxes compared to what they paid when they were married. From the perspective of a cost-benefit analysis, the reduction should exceed the costs incurred by married couples to engage in an economically viable marital separation. The greater the reduction in property taxes compared to the costs of separation, the greater the likelihood of dissolving the marriage. In this case, married couples strategically decide to enter into a false separation in order to pay less property taxes [1].

This study contributes to the scant existing literature on the tax incentives for strategic divorce. It is the first study to empirically investigate the effects of property tax on separation and divorce decisions. The empirical analysis was conducted on the Italian context because the municipal property tax scheme in Italy encourages strategic behavior by family members. Italian national and local daily newspapers reported that many separations and divorces were false and served only to defraud tax authorities. It was estimated that 7% of the separations fell within this category, and that there were about 135 thousand "false" primary residences in the country which served to evade property tax [2]. In a recent study, Di Porto *et al.* (2021) have shown that Italian households find it advantageous to redistribute properties among their members due to the abolition of the municipal primary home tax and

the increase in the municipal secondary home tax after 2008. They attributed this result to strategic behavior by Italian households to avoid property taxes.

In Italy, a municipal property tax was introduced in 1993. It encouraged strategic divorce decisions by spouses with a second home so that they could pay a lower amount of property taxes. Basically, different tax rates for a family's residence used as a primary home or as a secondary one were imposed at the Italian municipal level. Commonly, the tax on the secondary home was set at a rate higher than that on the primary residence. Moreover, there were no tax deductions and no additional tax breaks on the secondary home, while they were established on the primary one. Higher property taxes and the absence of tax breaks on the secondary home may have encouraged a strategic behavior whereby many married couples filed for false separation and divorce in order to recover part of property tax rebates. The divorce was false because the spouses continued to live together as a single-family unit exactly as they had done before the marital dissolution. However, one of them fictitiously changed her/his registered residence to what was the second home before the separation to demonstrate the authenticity of the marital dissolution and thus reduce the probability of assessments by the Revenue Agency. This allowed the spouses to form two distinct families to avoid paying higher taxes on the second home and benefit from generous tax relief on the two homes that became primary homes after the separation.

An empirical analysis was conducted on a sample of 6,458 Italian municipalities applying the ordinary least squares (OLS) and IVs approaches to census cross-sectional data on separations and panel data on divorces. The IVs method is adopted to account for the potential reverse causality between the individual's marital status and taxes (Dickert-Conlin, 1999). The results of the estimates showed that when the difference between the tax rate on the secondary home and that on the primary home increased by 1‰, the crude rate of marital separation increased significantly by six separations per 1,000 inhabitants aged 18 and over. The impact was positive and statistically significant also when an alternative index of marital separation was used. The crude divorce rate increased significantly by four divorces per 1,000 inhabitants aged 21 and over as this tax rate difference increased by 1‰. However, this finding was not robust when a different measure of the divorce rate was used in the regression analysis. This is not surprising because divorce has higher costs than marital separation. It is likely that married couples choose the least expensive marital dissolution procedure to achieve greater economic gains. Consequently, they prefer separation to divorce.

The small impact of the property tax differentials on marriage dissolution is in line with the findings of other studies that have analyzed the impact of income tax on divorce (Whittington and Alm, 1997). Although the impact is modest, it is important to study this phenomenon because it represents a potential source of marital dissolution induced by tax incentives. Moreover, it suggests that other economic factors may play a greater role than property taxes in marital separation/divorce decisions. Besides these aspects, it is also necessary to point out that the small impact may be due to a measurement error in the divorce and separation rates that does not distinguish between strategic and non-strategic marital dissolutions [3]. This implies that the impact may be underestimated.

The rest of the paper is structured as follows. Section 2 describes property tax incentives for marital separation and divorce in Italy. Section 3 describes the data, models and estimation methodology. Section 4 discusses the estimation results. Section 5 concludes.

2. Property tax incentives for marital separation and divorce in Italy

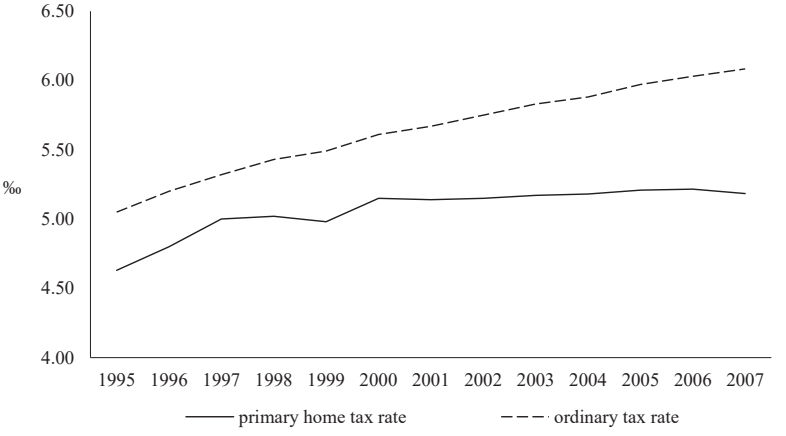
In Italy, about 75.2% of families reside in their own homes (The Italian Revenue Agency and MEF, 2019). Most of these homes are primary residences [4] where the family members

usually live together. A small proportion of them (about 17% in 2016) are second homes purchased as an investment in holiday-making or for other uses, profitable or otherwise. Second homes have much higher costs in terms of taxation than primary homes for Italian families because they are taxed at higher rates and without tax relief.

In the early 1990s, the property tax called "Imposta Comunale sugli Immobili" (ICI) was introduced by Legislative Decree (Lgs.D.) 504/1992 with the purpose of restoring fiscal autonomy to municipalities. The property tax was imposed at the "ordinary' rate on owners of buildings, building land and agricultural land within a range from 4‰ to seven‰ of their cadastral value. Within the same range, municipalities could set a tax rate on the dwelling designated as the "primary home" (*abitazione principale*) where the person who owned it – with property, usufruct or other real rights – usually lived together with his/her family members [5, 6].

A few years after its introduction, the ICI tax on the primary home was set at rates different from that of the ordinary tax. As shown by Figure 1, it increased in the 1990s, remaining constantly below the ordinary tax rate over the years. Hence, primary homes were taxed at much lower rates than second homes in the 1990 and 2000s. Among the causes of the different growth patterns of the tax rates was the possibility of municipalities to reduce the tax rate on the primary home by 50% (L. 662/1996). Moreover, since a large share of Italians own their homes, they do not look favorably on any primary residence tax increase, punishing at the polls mayors who enact one (Santolini, 2009).

The generous tax breaks on primary homes, especially if purchased as a first residence and the higher tax rates on secondary homes may have incentivized married couples to divorce fictitiously or to separate their registered residences into two distinct homes in order to avoid paying a higher amount of taxes on real estate. In greater detail, the owners of the primary home could benefit from a tax deduction of 180,000 lire (93 euros), which significantly increased to 500,000 lire (258 euros) in 1996; as an alternative, they could benefit from a reduction in the ICI tax rate on the primary home by up to 50%. From 1997 onwards, all municipalities were free to set the amounts of the ICI tax deductions higher than 500,000 lire on their own resolution. This resulted in an increase of ICI tax deductions amounting to about 24% in the immediately following years (Pellegrino, 2007) [7].



Source(s): Author own creation based on data released by Pellegrino's (2007) and the Institute for Finance and Local Economy (IFEL). Average values of property tax rates set by Italian municipalities

Figure 1.
Trend of the ordinary and primary home tax rate in Italian municipalities over the period 1995–2007

The second home was taxed at a higher rate than the primary home, without the owner benefiting from any tax deduction. It was not economically convenient for a married couple to own a second home because they would pay a higher amount of property tax. The more the ordinary tax rate was higher than the tax rate on the primary home, the greater were the costs supported by the married couple and their incentives to separate and to divorce strategically to recover money [8].

Additional generous tax breaks were provided for persons who purchased a dwelling for the first time (first home) classified as a non-luxury home. Specifically, the registration tax rate was set at 3% instead of 7%; the value-added tax rate was set at 4% instead of 10%, while the mortgage and cadastral taxes were applied at a fixed amount instead of 2 and 1%, respectively. Personal income tax deductions of 19% (with deduction ceilings) could be applied to notary fees sustained for the purchase of the first home and for the interest paid on the mortgage on the first home [9].

Overall, the municipal property tax regime in Italy made it more convenient for a married couple with a second home to fictitiously separate to avoid paying a higher property tax and having to forego generous tax breaks if they remained married.

3. Data and methods

The empirical analysis was conducted on 6,458 Italian municipalities. The municipality is the lowest level of local government in Italy, while the region and province are the upper and the intermediate tier ones, respectively. There are about 7,900 municipalities distributed among 20 regions and 107 provinces. The sample was based on municipalities belonging to the regions with ordinary statutes subject to the same national law provisions and, for this reason, more homogeneous and comparable in empirical analysis [10].

Both cross-sectional and panel data were exploited according to the availability of municipal data on divorces and marital separations collected by Istat. Cross-sectional data were collected for the census year 2001, since data on the number of separations at the municipal level are available only for that year. The dependent variables of marital separation used in the cross-sectional analysis were computed for legally[11] separated individuals as the share of legally separated spouses on married people [12]. A crude rate of marital separation is also considered and calculated as the share of legally separated spouses on the population aged 18 and over [13].

Longitudinal data with to compute the rates of divorced people were available for the period 2001–2007 [14]. The divorce rate was calculated as the share of divorced people in the number of married people. Moreover, the crude divorce rate was used and computed as the share of divorced people in the population aged 21 and over [15].

The key explanatory variable used in the empirical analysis was the difference between the ordinary ICI rate and the tax rate on the primary home. Data on the ICI tax rates have been collected by the Institute for Finance and Local Economy (IFEL). If the married couple owns a second home, it is expected that the ordinary tax rate may affect their decision to end their marriage. Thus, it is expected that the greater the difference between the tax rates on the second home and the primary home, the greater the incentive to end the marriage.

A set of control variables related to demography, socio-economic conditions and territorial characteristics were used in the empirical analysis according to the data available for cross-sectional and panel data analysis. Specifically, the controls used were: population density, as the share of inhabitants in the municipal area; the share of people aged 65 and over in the total population; the percentage of foreigners in the number of inhabitants of the municipality; the high school diploma possession index of the population aged 35–44 years old; the unemployment rate; per-capita disposable income; female labor

force participation, altimetry of the municipality [16]; dummies for the geographical macro-area [17].

The variables of socio-demographic and territorial characteristics were collected from the Statistical Atlas of Italian Municipalities, the XIV General Census of Population and Housing and the territorial classification issued by Istat. Data on disposable income were not available at the municipal level. For this reason, data on the personal income tax (*imposta sul reddito delle persone fisiche*) were used as its proxy. Descriptive statistics of each variable are summarized in Table 1.

3.1 Empirical models

The effects of the municipal property tax rate differentials between the secondary home and the primary home on marital separation decisions were estimated using a cross-sectional model (1) where the dependent variable was the (crude) marital separation rate of the i-th municipality at census year 2001. On the right side of (1), ΔICI is the difference between the ordinary ICI rate and the ICI rate on the primary home. It is expected that the greater is ΔICI, the greater the incentive to end the marriage. A N × K matrix x of control variables is included among the regressors. They were dated year 2001. Finally, a constant term c, an error term ε, which is normally distributed with zero mean and constant variance, are introduced on the right side of (1).

$$Separation_i = \alpha \Delta ICI_i + \beta x_i' + c + \varepsilon_i \quad (1)$$

Longitudinal data model (2) was used to estimate the effects of the municipal property tax rates differentials on divorce decisions. The dependent variable of model (2) consisted in the (crude) divorce rate of the i-th municipality at time t. In the model, municipal fixed-effects f_i

Variable	Obs	Period	Mean	Std. Dev	Min	Max
Divorce rate	45,469	2001–2007	0.023	0.023	0.000	2.439
Crude divorce rate	45,456	2001–2007	0.014	0.010	0.000	0.194
Legal separation rate	6,700	2001	0.024	0.014	0.000	0.116
Crude legal separation rate	6,698	2001	0.014	0.008	0.000	0.058
Property tax diff	6,647	2001	0.553	0.737	0.000	3.000
Property tax diff	46,602	2001–2007	0.738	0.818	0.000	4.000
Density	6,697	2001	301.489	645.803	1.148	12,674.750
Density	46,865	2001–2007	308.921	650.210	1.037	12,674.750
Elderly people %	6,698	2001	21.622	6.732	5.634	62.353
Elderly people %	46,879	2001–2007	22.122	6.531	4.364	62.791
Foreign people %	6,441	2001	2.435	2.099	0.024	29.780
Foreign people %	46,615	2001–2007	3.747	3.138	0.000	29.780
High school diploma	6,699	2001	33.484	10.265	0.000	100.000
Per-capita income (log)	6,698	2001	9.071	0.299	6.915	11.587
Per-capita income (log)	46,879	2001–2007	9.104	0.333	6.748	11.885
Unemp. rate	6,699	2001	9.080	7.871	0.000	51.320
Female labor force part	6,699	2001	36.304	7.356	5.900	65.900
Municipal election year	6,694	1999	0.655	0.475	0.000	1.000
Provincial election year	6,701	2000	0.024	0.155	0.000	1.000
Altimetry	6,700	2001	3.067	1.541	1.000	5.000
North-East	6,701	2001	0.138	0.344	0.000	1.000
North-West	6,701	2001	0.446	0.497	0.000	1.000
Center	6,701	2001	0.150	0.357	0.000	1.000

Table 1.
Descriptive statistics

Source(s): Author work

and time-effects τ are included to control for unobserved municipal characteristics and common shocks across municipalities, respectively. The property rate differentials measured by the ΔICI are included at time t in the model (2) since the divorce decision is taken by the couple at the same time t, not before. In fact, although the legal marital separation decision takes place three years before the divorce decision, the couple decides whether or not to divorce by considering the current property tax rate differentials, which could be higher or lower than in the past three years.

The set of controls z available for the longitudinal analysis were population density, elderly people, foreign people and per-capita income (in natural logarithm). For cross-sectional analysis, it was also possible to add to these the index of high school diploma possession, unemployment rate, female labor force participation, altimetry zoning variable and dummies for macro-areas in which municipalities are located.

$$Divorce_{it} = \varphi \Delta ICI_{it} + \gamma z'_{it} + c + f_i + \tau_t + \varepsilon_{it} \quad (2)$$

The models were estimated with the OLS estimator. However, considering the potential reverse causality between the municipal ICI rate differentials and decisions to end a marriage (Dickert-Conlin, 1999), the two-stage least squares (2SLS) estimator was also used. The 2SLS uses exogenous variables as valid instruments to identify the causal correlation between the outcome and the endogenous variable. Instruments must be uncorrelated with the error term and correlated with the endogenous variable (Wooldridge, 2002). The 2SLS method consists of two stages of regression. In the first stage, the endogenous variable is regressed on both instruments and control variables. In the second stage, the outcome variable is regressed on the set of explanatory variables and the fitted value of the endogenous variable obtained from the first-stage regression. In both stages, the OLS method is employed to estimate model specifications.

Dummy variables for electoral year were used as instruments at the municipal level of government. In the cross-section analysis, the municipal election year dummy variable assumed value 1 when the municipality was in an election year in 1999 and zero otherwise. About half of the municipalities were in an election round in that year, and the expected effects of the electoral cycle on the ICI rate differentials should be stronger and more protracted over time. In the panel data analysis, the municipal election year was considered at time t.

In Italy, local government elections are exogenous since they are decided by the national government. Thus, they can be valid instruments with which to estimate the causal inference between the ICI rate differentials and marital dissolution. According to the theory of the electoral budget cycle (Rogoff, 1990), incumbent politicians reduce tax rates during election periods to attract electoral consensus and enhance their re-election chances. Therefore, it can be expected that they also reduce differentials on the ICI rates in order to curb tax noise during the election campaign and increase their chances of re-election. This implies that policymakers cut tax rates on secondary homes by more than they do on primary homes to further bolster their chances of re-election.

4. Results

Table 2 sets out the estimation results for cross-sectional data. The first two columns display the results of the OLS and 2SLS estimates of model (1) using the ratio between legally separated people and married people as the dependent variable. The remaining columns (3)–(4) present the OLS and 2SLS estimation results, respectively, for model (1) with the crude rate of legal separation as the dependent variable. In columns 1, the OLS estimates show a small positive and significant impact of the municipal ICI rate differentials on marital separation. In

	Legal separation rate		Crude legal separation rate	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
Property tax diff	0.002***	0.012***	0.001***	0.006***
	(9.05)	(3.51)	(8.98)	(3.28)
Density	−0.0000001**	−0.000001**	−0.0000001**	−0.000001**
	(−0.50)	(−2.62)	(−0.60)	(−2.51)
Elderly people %	0.0002***	0.0004***	0.00004***	0.0002***
	(4.93)	(4.80)	(2.03)	(3.33)
Foreign people %	0.0003***	0.0002	0.0002***	0.0001
	(3.80)	(1.38)	(3.32)	(1.19)
High school diploma	0.0002***	0.0002***	0.0001***	0.0001***
	(9.95)	(4.29)	(11.41)	(5.32)
Per-capita income (log)	0.009***	0.004*	0.005***	0.003**
	(5.57)	(1.69)	(6.11)	(2.26)
Unemp. rate	0.0004***	0.0004***	0.0002***	0.0002***
	(11.55)	(8.16)	(11.05)	(7.93)
Female labor force part	0.0002***	0.0003***	0.0002***	0.0002***
	(6.16)	(6.16)	(8.01)	(7.59)
Altimetry	−0.0007***	−0.0006***	−0.0003***	−0.0002***
	(−7.55)	(−4.88)	(−5.50)	(−3.56)
North-East	0.015***	0.013***	0.008***	0.007***
	(18.87)	(12.47)	(18.21)	(12.61)
North-West	0.019***	0.019***	0.010***	0.010***
	(24.79)	(22.95)	(24.54)	(23.15)
Center	0.010***	0.007***	0.006***	0.005***
	(18.48)	(5.40)	(19.79)	(6.74)
Constant	−0.090***	−0.055***	−0.051***	−0.034***
	(−6.81)	(−3.10)	(−7.35)	(−3.64)
First-stage results				
Municipal election year 1999		−0.101***		−0.101***
		(−5.02)		(−5.02)
Kleibergen-Paap rk LM st		0.000		0.000
Kleibergen-Paap Wald F st		25.19		25.19
Obs. No.	6,388	6,383	6,388	6,383

Note(s): A constant term is included in each regression. *t*-value in brackets and standard errors robust to heteroskedasticity. Significant at level ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$
Source(s): Author work

Table 2.
The cross-sectional OLS and 2SLS estimation results of the impact of property tax rate difference on the (crude) legal separation rate

detail, they show that a 1‰-point increase in the ICI rate differentials is accompanied by a 0.002-point increase in the share of legally separated spouses on married people. The 2SLS estimation results confirm the OLS results, showing a 0.012-point higher impact. Moving to columns (3) and (4) of the table, one observes that the crude legal separation rate is positively and significantly sensitive to changes in the municipal ICI rate differentials. In particular, the 2SLS estimates reveal that an increase of 1‰ in the ICI rate differentials is accompanied by an increase of 6 marital separations per 1,000 inhabitants aged 18 and over.

As displayed in columns (2) and (4) of Table 2, the coefficient of the instrumental variable "*Municipal election year 1999*", estimated in the first-stage regressions, is negative and statistically significant at 1% level. Specifically, the ICI rate differentials decreased significantly in the municipal election year 1999. This instrument is valid if it is correlated with an endogenous regressor and uncorrelated with the dependent variable. The Kleibergen-Paap rk LM statistic is used to test if the instrumental variable is correlated with the endogenous variable (Kleibergen and Paap, 2006; Baum *et al.*, 2007). In Table 2, this test

statistic rejects the null hypothesis of under-identification at 1% level of significance, suggesting that excluded instruments were correlated with the endogenous regressor. However, if the correlation is not zero but small, the instrument is weak. The Kleibergen-Paap rk Wald F statistic makes it possible to test for the presence of a weak-instruments problem (Kleibergen and Paap, 2006; Baum *et al.*, 2007). The Kleibergen-Paap rk Wald F statistic shows that the instruments used were not weak, since its value is 25.19. According to the 'thumb rule', weak identification should not be a problem when the value of the Wald F statistic is in fact at least 10 (Staiger and Stock, 1997). Both Kleibergen-Paap statistics are robust to heteroskedastic, clustered and serially correlated errors.

As regards the control variables, the estimates show that marital separations decrease significantly in densely populated municipalities, suggesting that social aggregation (Zhang *et al.*, 2014) could act as a driver of marital dissolution in those municipalities. The rate of marital separations increases as the proportion of elderly people becomes greater. This result is in contrast with the hypothesis that older people tend to separate less than younger people because they have accumulated more wealth and capital assets over the course of their married lives (Booth *et al.*, 1986). According to this hypothesis, the accumulation of wealth and income should stabilize marriage much more among the elderly than among young people (Booth *et al.*, 1986).

A larger share of foreigners in the population would be associated with a greater propensity to separate. The growth in the share of the foreign population can lead to an increase in interracial marriages, favoring a multicultural society but also higher marital separation rates due to greater conflicts within interracial married couples compared with endogamous ones (Kreider, 2000; Bratter and King, 2008; Milewski and Kulu, 2014) [18].

Having a higher level of education and a higher disposable income leads to a greater propensity for legal marital separation. Both conditions make it more convenient to abandon married life and return to single status. Female participation in the labor force increases the rate of marital separation. This result is in line with the theoretical view that the economic benefits of marriage are lower for female workers, who have the economic independence necessary to end an unhappy marriage through divorce (Hobson, 1990; Ruggles, 1997; Sayer and Bianchi, 2000; Schoen *et al.*, 2002; Frisco and Williams, 2003; Sayer *et al.*, 2011; Raz-Yurovich, 2012). Marital separation is counter-cyclical, and it increases significantly when the unemployment rate rises. Marital instability and divorce claims increase in bad economic circumstances due to the job loss of one or both spouses, which reduces the financial resources available to the married couple to maintain harmony in the marriage and increases the marital conflicts that result in requests for separation (South, 1985; Jensen and Smith, 1990; Eliason, 2012).

A significant reduction in the rate of marital separation is found by moving from mountainous to plain areas. This result is in contradiction with the theoretical view that in more urbanized areas, like lowland ones, there are less stable relationships and higher divorce rates because of greater population mobility, less social control and more economic opportunities (Breault and Kposowa, 1987). However, life satisfaction can be greater in urbanized areas than in rural ones (Lenzi and Perucca, 2018, 2021) because more services are offered to inhabitants, road connections are better and there is a wider range of cultural facilities, which may be reflected in a greater well-being of individuals that benefits marital stability.

Marital separations are more frequent in the municipalities of central-northern Italy than in those of the south (De Rose, 1992; Vignoli and Ferro, 2009; Gabrielli and Vignoli, 2013; Istat, 2014). Geographical differences are important in explaining divorce trends in terms of cultural factors and the degree of socio-economic development (Yi and Deging, 2000). Divorce can be a source of a social stigma in the areas of Southern Italy, and this may induce married couples to divorce less than those in the Center–North. The demand for divorce among

women may be higher in the North of Italy (De Rose, 1992) because there are greater opportunities of labor market entry for women, who are more economically independent from their husbands and able to financially support themselves in the event of divorce [19].

The effects of the municipal ICI rate differentials on divorce decisions are displayed in Table 3. Set out in columns (1) and (2) of the table are the OLS and the 2SLS estimates using the divorce rate as the share of divorced people in the number of married people as the dependent of model (2). In columns (3) and (4), the OLS and 2SLS estimation results refer to the regression analyses of model (2) with the crude divorce rate as the dependent.

The panel data analysis reveals that the impact of the ICI rate differentials on divorce is not statistically significant except for the 2SLS results displayed in column (4). The significant effect is positive but small: an increase of 1‰ in the ICI rate differentials is accompanied by an increase of 4 divorces per 1,000 inhabitants aged 21 and over. Not surprisingly, the impact of the ICI rate differentials on divorce is less significant than that on marital separation. Divorce is in fact more expensive than marital separation. As a result, married couples are less likely to divorce than to separate in order to seek tax breaks.

The coefficient of the instrumental variable estimated in the first-stage panel data regressions is negative and statistically significant at 1% level. Table 3 shows that municipalities in election year reduce the ICI rate differentials. The Kleibergen-Paap rk tests suggest that the instrument is strongly correlated with the endogenous variable.

Among the controls included in the panel data regression analysis, population density impacts negatively and significantly on the crude rates of divorce (see columns (3) and (4)) [20]. A greater share of foreign people is accompanied by a significant increase in divorce decisions, and a higher disposable income per person significantly increases the risk of divorce.

	Divorce rate		Crude divorce rate	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
Property tax diff	−0.0001	−0.0006	−0.00004	0.004***
	(−0.413)	(−0.066)	(−0.635)	(2.664)
Density	−0.000001	−0.0000003	−0.000002***	−0.000004***
	(−0.455)	(−0.052)	(−3.012)	(−3.369)
Elderly people %	−0.00003	−0.00003	0.00006	0.00004
	(-0.318)	(-0.223)	(1.361)	(0.830)
Foreign people %	0.0003***	0.0003***	0.0002***	0.0002***
	(5.334)	(2.360)	(7.596)	(4.825)
Per-capita income (log)	0.005***	0.005***	0.005***	0.004***
	(3.843)	(2.779)	(7.484)	(6.642)
First-stage results				
Municipal election year		−0.038***		−0.039***
		(−8.29)		−8.29
Kleibergen-Paap rk LM st		0.000		0.000
Kleibergen-Paap rk Wald F st		68.71		68.72
Time dummies	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
Obs. No.	44,683	44,683	44,684	44,684

Note(s): A constant term is included in each panel data regression analysis. *t*-value in brackets and standard errors robust to heteroskedasticity. Significant at level ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Author work

Table 3.
The panel data OLS and 2SLS estimation results of the impact of property tax rate difference on the (crude) divorce rate

5. Conclusions

The effects of property taxes on strategic decisions of separation and divorce have been neglected in the literature. The current study contributes to filling this gap by investigating the Italian context. The Italian case provides a good starting point for analysis of this issue since the municipal property taxation scheme has created incentives to strategically separate and divorce in order to pay smaller amounts of property taxes and to obtain additional tax breaks.

Strategic marital dissolutions arranged to pay lower amounts of property tax should be considered seriously by policymakers because they can create additional costs for society (Schramm, 2006). An example would be money transfers paid to falsely separated parents with children. Such transfers are a waste of public money detrimental to taxpayers. Strategic separation can also undermine the economic well-being of the local community by creating a shrinkage of the municipal tax base due to the change of residence of separated individuals (Speare and Goldscheider, 1987) to outside the municipality. If the reduction in the municipality's revenue is not offset, there will be a cut in the provision of municipal public services detrimental to the local community's well-being. Thus, exploring if and how local property taxes impact on marital instability can significantly help policymakers to understand if and to what extent the local community and society overall could be economically damaged by them.

The empirical analysis shows that the decisions to separate depends on tax rate differentials on primary and secondary homes. There is a significant increase in marital separations as the difference between the municipal secondary and primary home tax rate grows. Increasing the secondary home tax rate to above that on the primary home results in a significant increase in the total amount of property tax payable by a married couple. Added to these factors are the generous tax breaks on the second home that may be lost. Therefore, a married couple has an incentive to separate if it is possible to recover some or all of the property tax benefits. Divorce decisions are less affected by changes in the municipal property tax rate differentials than are marital separations. This result is not surprising because spouses choose the least costly marriage dissolution procedure, which is separation.

The estimated impact of property tax differentials on marital dissolution is small. This suggests that other economic factors play a more significant role than local property taxes in the decision to end a marriage. However, it cannot be excluded that the impact is underestimated because of an error in measuring strategic divorces.

Empirical analysis suggests that property tax is a source of marital instability in Italy. The main limitation of the analysis is that the strategic behavior of the married couple is inferred from econometric analysis with data aggregated at the municipal level. To investigate this phenomenon more precisely, it would be useful to have individual data collected by surveys on strategic divorce decisions due to property tax incentives. This intriguing issue warrants further investigation in future research.

Notes

1. Recently, Alm *et al.* (2022) have emphasized the importance of strategic divorce by noting that "a couple can strategically choose to divorce to obtain some economic benefits, even if the individuals are actually in a satisfactory marriage" (Alm *et al.*, 2022, p. 1104, p. 1104).
2. See "Le false prime case? In Italia ci sarebbero circa 135 mila" published in *Corriere della Sera* on 8 December 2019 and "Ti amo, separiamoci. 12 cose da sapere sulle finte separazioni" (by Ilaria Lonigro) published in *La Repubblica* on 24 January 2018.
3. The author would like to thank an anonymous reviewer for suggesting this possibility.
4. About 60.6% of homes were primary in 2016 (The Italian Revenue Agency and MEF, 2019).

5. Art. 8, comma 2, Lgs.D. 504/1992.
6. The ICI tax became the primary source of tax revenue for Italian municipalities, reaching 45% of the total tax revenue in 2006. Although it was the preeminent means with which to finance Italian municipal public expenditure, in 2008 the national government decided to abolish the ICI tax on the primary home (L. 126/2008), except for stately homes, residences, villas and castles. A different version of the ICI tax, called "Imposta Municipale Propria", was introduced in 2012.
7. The essential criterion for benefiting from these tax deductions was that the owner of the primary home had to live there with her/his family. A further criterion was added in 2006, namely that the primary home must also coincide with the owner's officially registered residence.
8. Assuming a tax deduction of 258 euros for the primary home, a revaluation of 5% and the ICI rates on the primary and second home of 5 and 7‰, respectively, the amounts of property tax paid by a married couple on a first and second home of an identical cadastral value of 1,000 euros are 267 euros and 735 euros, respectively. For a family with a second home, the total amount of property tax would be 1,002 euros a year, while for a "false" separated couple, it would be 534 euros. The property tax difference is 468 euros a year. This difference may be greater because the cadastral value of second homes is generally higher than that of primary homes because the former are used as holiday homes located in tourist areas. Furthermore, all the property tax breaks on first homes should be added to this difference, offsetting the cost of a consensual separation/divorce.
9. The main requisite to benefit from these tax rebates was that the primary home had to be located in the municipality where its owner had her/his own officially registered residence or in another municipality where the owner carried out his/her work. Other essential requirements were that the purchasers of a first home with such tax breaks could not have (exclusively or in the community of the property regime) property, usufruct or other real rights on another dwelling in the municipality where the purchased dwelling was located. Similarly, the buyer could not hold the same real rights on another house purchased with such tax breaks on Italian territory.
10. Regions with special statutes are Aosta Valley, Friuli-Venezia-Giulia, Trentino Alto-Adige, Sicily and Sardinia. They have more legislative and fiscal autonomy by virtue of their special statutes.
11. Legal separation includes both consensual and judicial separations. A consensual separation is a mutual agreement between spouses on the sharing of property in communion and on the custody of their children, as well as on all possible issues related to separation (e.g. maintenance allowance, alimony payments, children support). If the spouses do not find any agreement, they face a judicial separation.
12. In Italy, spouses may freely choose a *de facto* separation by interrupting their married life without any judicial intervention that authorizes them to live separately. *De facto* separation does not have any legal effects on marriage, and it does not involve more property tax benefits for a separated couple. However, it can be considered as a sort of "antechamber' to consensual judicial separation, which instead creates both legal effects and economic benefits for the separated couple.
13. In Italy, it is possible to contract marriage after the age of 18 or, in rare cases, after the age of 16 (art. 84 of the Italian Civil Code).
14. The institution of divorce was introduced in Italy by law 898/1970. Law 74/1987 reduced the years of marital separation necessary for the pronouncement of the divorce sentence from five to three. Law 55/2015 further reduced the time for divorce applications from three years to 12 months in the case of judicial separations and to six months in the case of consensual separations (also in the case of transformation from judicial into consensual).
15. The age of 21 years of the population was set as the minimum age threshold within which an individual who had married and separated at the age of 18 could apply for divorce.
16. The altimetry assumed values from 1 to 5, where 1 and 2 corresponded to a municipality located in the internal mountain and coastal mountain areas, respectively; 3 in the inner hills; 4 in the coastal hills; 5 on the plain.

17. A dummy variable for the geographical area assumed value 1 if the municipality was in the north-east regions, and zero otherwise. Analogously, two dummy variables were used for those municipalities located in the north-west regions and in the center.

18. In Italy, marriages of mixed couples, in which one spouse is a native Italian citizen and the other is foreign with or without acquisition of Italian citizenship, increased by about 30% between 2000 and 2012. In the same time period, the number of divorces in mixed couples increased by 91.6% (Istat, 2014). A decline in marriages of mixed couples is observed during the years 2008 and 2009 due to the global financial crisis and the introduction of art. 1, paragraph 15, of law no. 94/2009, which imposed on a foreigner wanting to marry in Italy the obligation to show a document certifying the regularity of their presence in the country (Istat, 2014).

19. Tedesco (2012) points out that the "differences between working and nonworking wives in terms of marital stability should be smaller in the Northern than in the Southern part of the country, because of the institutional and cultural context that makes female employment more normative and promoting gender equality" (p. 6). However, this hypothesis is not confirmed by his empirical analysis, which concludes that "in Northern Italy female engagement in paid work is still far from being considered as normative, which is the condition that mitigates the disruptive effect of female employment on marital stability" (p. 10).

20. As remarked by Zhang *et al.* (2014, p. 161): "population density manifests social aggregation force, which means that its reduction will increase the divorce rate (Breault and Kposowa, 1987). On the other hand, there is no widely accepted answer because cities with high population density generate increased divorce rate".

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Further reading

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