

## Effects of Income tax of Second Home Ownership

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### Abstract

Spain is the EU country with the lowest percentage of dwelling to rent. This scarcity makes difficult the access to housing for determined demand segments. Nevertheless, Spain is the EU country with the highest percentage of second home. On the one hand, there is excess of demand for rental units and on the other hand, there are dwellings that are not being rented by owners. A measure to stimulate rental supply is the introduction of fiscal benefits that increase the income of landlords. This article analyzes the determinants of the decision of renting a second home, emphasizing tax variables. Simulations of possible Personal Income Tax reforms are also performed. Data is gathered from the European Community Household Panel. The results obtained show that the income tax has significant effect when deciding to rent a dwelling.

**Key word:** renting housing, second home, income tax, Spain, probit.

JEL: H24, H31

## 1. Introduction

Spain is the EU country with the lowest percentage of dwelling to rent (see Table 1). According to the European Community Household Panel (ECHP) of 1998, the percentage of rental housing to the total of main residences was only 11 percent<sup>1</sup> which is one third of the EU average. There are also qualitative differences regarding the type of renting, since no more than a 6.7 percent of all rental housing is social rent, much smaller than the European average.

[INSERT TABLE 1 HERE]

However, there is a large share of real estate in households' wealth. The result is a very large number of unoccupied homes. According to the Census of Population and Housing 2001 published by the INE (Statistics National Institute of Spain), the difference between the number of dwellings (20 946 554) and the number of households (14 187 000) is 6 759 554, which means a surplus of a 32.3 percent, the highest in Europe. This proportion is well above the average for other countries, even though it is probably overestimated.

This scarcity in the rental market makes difficult the access to housing for a determined demand segment. Rental demand in Spain is mainly a captive demand, formed by collectives in precarious labour situation or with not enough income to access ownership.

Therefore, the "Spanish housing problem" is that on the one hand, there is excess of demand for rental units and on the other hand, there are dwelling that are not being rented by owners.

There are several factors to understand this behaviour. The rental regulations tilted in favour of tenants for a long were (Garcia-Montalvo, 2003) despite the reforms<sup>2</sup> happened. Moreover, the actions of the courts are often very slow to resolve flagrant abuses benefiting tenants (Martínez and Llanos, 2003). Regarding the market agents, the rented sector is unattractive for suppliers due mainly to lower returns of this market (Pareja and San Martin, 2002). With low rent levels, the return that owners can obtain

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<sup>1</sup> For 2007 this percentage is 11.2 according to Spanish Housing Ministry.

<sup>2</sup> For an analysis of regulation for rental market, jointly with the description of the main trends of relates policies see Pareja and San Martin, 2002.

from letting their accommodation would seem insufficient to offset the associated costs resulting, in particular, from damage to the premises and the risk of unpaid rents (OCDE, 2005). As far as the demand is concerned, in a context of low interest rates and longer-term mortgage loans, the rental choice does not offer any attraction. Additionally, the owner offers security in the tenure and revaluation expectations. Finally, housing policies mainly focused to ownership, through to the tax deductions for dwelling purchases, with the consequent detriment of renting.

A possible improvement for this situation could be achieved by increasing the supply, implementing fiscal tools which affect the use of empty dwelling. Some measures have already been implemented in the Spanish Income Tax in 2003 taxable period, such as tax deductible depreciation expenditures increase from a 2 to a 3 percent of the purchase price and a 50 percent reduction of the rental houses' taxable income.

This article analyzes the determinants of the decision of renting a second housing, emphasizing tax variables. That is, the effect of decreasing the relative taxation on rental dwelling compared to not rental ones. We expect that a higher empty housing ownership penalization through Personal Income Tax (PIT) will cause an increase in the rental housing supply.

Although there are many studies on the choice of the main residence, there are no relevant studies on the decision of renting or not a home, neither for Spain nor for any other countries. We believe this is a very interesting topic, especially for those countries, such as Spain, where a considerable part of the population has problems to access housing.

The article is organized into four sections. In the second section, a theoretical model analyse the decision of renting a second home<sup>3</sup>. In the third section, the empirical model and the database employed are described, as well as the estimation results. The empirical model consists of a probit estimation, which enables us analyzing which variables, and to which extent, influence the decision of renting or not a second home. Data used are gathered from the ECHP. Next, in section four, a simulation of the effect of changes in taxation of empty dwelling on the supply of rental housing is performed. Finally, the main research conclusions are presented.

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<sup>3</sup> In this paper, second homes are those which are not main residences, that is, empty housing as well as those used sporadically by their owners are included.

## 2. Theoretical framework. Effects on the rent of housing

According to Haig-Simons' extensive concept of rent, non-rented dwelling - second home, empty dwelling or those occupied by the owner- produces an income in kind equal to that produced by rental housing. This income in kind is consumed by the owner, so the return rate in rent housing and the return rate in second housing are only fiscally different. In this way, rental housing are taxed by the obtained net income, income minus expenses, in accordance with most of the legislations, while empty dwelling are tax-free<sup>4</sup> or subject to a lower tax than that corresponding to rental housing<sup>5</sup>.

If  $i_t^h$  is the expected real net return rate before-tax related, either an empty or a rental housing, and  $r_t^r$  is the after-tax expected real return rate in the renting in period  $t$ , then:

$$r_t^r = i_t^h(1-tmg_{jt}) \quad [1]$$

where  $tmg_j$  is the marginal tax rate for individual  $j$  in period  $t$ .

If  $r_t^e$  is the after-tax expected real return rate in empty housing and  $i_t^f$  is the empty housing imputed income rate through the income tax, then:

$$r_t^e = i_t^h - i_t^f tmg_{jt} \quad [2]$$

the arbitrage condition is:

$$r_t^r - r_t^e = i_t^h(1 - tmg_{jt}) - (i_t^h - i_t^f tmg_{jt}) \quad [3]$$

$$r_t^r - r_t^e = tmg_{jt} (i_t^f - i_t^h) \quad [4]$$

that is, the rental housing net return rate after-tax is higher than or equal to that of the empty housing, when the empty housing tax-base rate is higher than or equal to the housing net return rate before-tax. That is, when the empty housing tax-base rate is higher than rental housing taxation:  $i_t^f > i_t^h$

The housing net rate of return before tax is (Laidler, 1969, Aarón, 1972, Rosen, 1979, King, 1980):

$$i_t^h = \frac{R_t - D_t - i_t M_t + \pi_t V_t}{V_t - M_t} \quad [5]$$

<sup>4</sup> France's and Great Britain's case.

<sup>5</sup> Germany's and Spain's case.

where  $R_t$  is the gross rent market of a property,  $D_t$  is the depreciation, repairs and maintenance expenditures,  $M_t$  is the mortgage amount,  $i_t$  is the mortgage interest rate,  $\pi$  is the expected house price rate increase and  $V_t$  is the dwelling market value. All these magnitudes refer to period  $t$ . Assuming that the individual's rate of return on capital and the mortgage rate are equal; that depreciation, repairs and maintenance expenditures are a percentage ( $d_t$ ) of the dwelling market value in this period; that the individual get into debt a percentage ( $m_t$ ) of the dwelling value; and that capital gains are also a percentage ( $\pi_t$ ) of the dwelling value (Laidler, 1969, Aaron, 1972, Rosen, 1979, Ter Rele and Van Steen, 2003), then:

$$i_t^h = \frac{V_t(i_t - d_t - i_t \times m_t + \pi_t)}{V_t(1 - m_t)} \quad [6]$$

In case the second home is not rent, in Spain the tax return is equal to a percentage  $v_t$  of the fiscal value of housing  $VC_t$ , so that:

$$i_t^f = \frac{v_t VC_t + \pi_t V_t}{V_t(1 - m_t)} \quad [7]$$

If  $a_t$  is the ratio of the fiscal value of housing to the market value, then:

$$i_t^f = \frac{V_t(a_t \times v_t + \pi_t)}{V_t(1 - m_t)} \quad [8]$$

Through equations [6] and [8], it can be analyzed how these variables influence the decision of renting or not a second home. For instance, assuming that empty dwelling pay taxes of a 2 percent of their fiscal value of housing; that this fiscal value of housing is a 24 percent of the housing market value (Gonzalez-Páramo and Onrubia, 1992; García-Montalvo and Mass, 2000); that depreciation, repairs and maintenance expenditures are an annual percentage of a 3.5 percent of the housing market value (Laidler, 1969, Aaron, 1972, Jaén y Molina, 1994, Rapaport, 1997, White and White, 1977); and that the external financing percentage is a 80 percent (as it can be seen, capital gains are irrelevant for this study), the arbitrage relation between both equations gives a value of  $i$  equal to a 19.9 percent. Below that return, the dwelling is rented; otherwise, it will remain empty. As the financing percentage decreases, so does  $i$ ; and this way, there is a lower probability of renting the dwelling. For instance, if the external financing percentage is 50 percent,  $i$  will be equal to a 7.96 percent. In this way, if the second home gross return is higher, the best option will be not renting the

housing. The remaining expenses related to the housing have the same effect, since they are deductible in the income tax. Therefore, when these expenses are high, there are more incentives to rent the house.

On the other hand, increases in the empty housing tax-base, due to fiscal value of housing increases or higher percentages of fiscal value of housing, produce an increase of  $i$  and therefore more incentives to rent the dwelling. A decrease in the rental housing taxed income would have the same effect.

### **3. Empirical model: choice between renting or not renting**

This section analyzes determinants of the decision to rent an empty second home, emphasizing fiscal variables. The used data are the household and individuals file of the ECHP. The ECHP is a statistic database which gathers harmonised information about household within fifteen countries of the European Union under the cooperation of Eurostat. To elaborate the ECHP it is used the panel data technique, which is developed in consecutive annual waves or cycles. We have used the first five waves of the ECHP, corresponding to the period 1994-1998. However, since the information on individuals' and households' income lagged one year, the data employed belong to the period 1994-1997. Besides, in the Spanish Institute for Fiscal Studies is available the information on the type of tax statement and the marginal rate corresponding to the same period. The sampling unit is the individual. Although investment decisions are usually taken within the family environment, when its members earn their own income, they tend to choose the individual tax statement. In such case, there is no available information on family's marginal rates. There are 11 083 observations of residents in Spain, who declare to have at least one second home<sup>6</sup> in the period of this study. It is assumed that the individual who owns a second home and obtains the real estate return is renting the second home; while the rest of individuals who own a second home and do not declare real estate returns are keeping it empty<sup>7</sup>.

According to the data provided by ECHP on individuals owning a second home, only a 5.38 percent of them decide to rent it<sup>8</sup>. Note that this percentage only refers to houses rented by private owners, not to houses rented by social institutions or by estate agents.

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<sup>6</sup> Information provided by the panel does not specify the number of second homes.

<sup>7</sup> Due to fiscal reasons, the respondent might lie about its second home use. There are no available data to take this fact into account.

<sup>8</sup> We consider an average of four years, according to the sample's data.

A probit panel model with random effects is estimated, which attempts to represent the decision-taking process. The functional form chosen is the following:

$$I_{jt} = \sum_{t=94}^{97} \alpha_t + \gamma_1 \ln Y_{jt} + \gamma_2 \text{tmg}_{jt} + \gamma_3 \ln(\text{Pr}_{jt}) + \gamma_4 \ln \pi_{jt} + \gamma_5 \text{Statement} + \gamma_6 Z_{jt} + v_{jt} + u_j \quad [9]$$

where  $Y_{jt}$  is the individual's permanent income;  $\text{tmg}_{jt}$  is the marginal tax rate in the individual's PIT;  $\text{Pr}_{jt}$  is the proportion of taxed rental housing relative to empty dwelling after income tax;  $\pi_{jt}$  is the expected capital gains; *Statement* is a dummy variable, representing the choice between individual and joint tax statement;  $Z_{ijt}$  is a vector of socio-demographic variables, which can affect the decision of renting a second home and are used to control for some of the heterogeneity present in that decision. In order to take the temporal heterogeneity into account, four temporal dummy variables  $\alpha_t$  are considered, one per year. The error term is assumed to have two components:  $v_{jt}$  and  $u_j$ . The second one,  $u_j$ , represents the individual's specific heterogeneity and is assumed to be uncorrelated with the vector of explanatory variables. For each individual, it is stated that, when  $I_{jt} > I_{jt}^*$ , the individual rents the dwelling and, otherwise, keeps it empty.

The dependent variable takes the value one when the individual rents the dwelling and zero otherwise. The model is estimated without including a constant term, since a temporal dummy variable for each year in the sample is included, so the corresponding coefficients,  $\alpha_t$ , represent the specific effect of the corresponding period and not the difference regarding a possible reference period.

As it can be seen, this model resembles the election models of main residence tenure of Li (1977), Lee and Trost (1978), Rosen (1979), Horioka (1988) and Jaen and Molina (1994)<sup>9</sup>. However, in this case it is applied to the decision of renting or not a second home.

Next, we describe each of the explanatory variables included in the probit model. They are classified in two groups. In the first group, we present the economic variables, which are expected to influence the decision of renting a household. In the second group, we include a set of control variables, reflecting the socio-demographic characteristics of the individual and her household.

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<sup>9</sup> The previous studies only distinguish two sorts of tenure, ownership and renting. There are multinomial studies which assume that there is rationing in some of the alternative tenures (King, 1980, Börsch-Supan and Pitkin, 1988, Bourassa, 1995, Duce, 1995, Rapaport, 1997, Walker *et al.* 2002, Barrios and Rodríguez, 2005).

### *Economic characteristics*

- The logarithm of permanent income,  $\ln Y_j$ . In order to obtain a measurement of this variable, the model used by Goodman and Kawai (1982)<sup>10</sup> is applied. We decide not to include the real estate return, in order to avoid endogeneity problems between the permanent income definition and the dependent variable in the probit. So, we perform an estimation in which the dependent variable is current income (without the real estate return) and the socio-demographic variables are independent. Prediction from this estimation is considered as permanent income, the residual part constituting the transient component. The results and the variables' definition are included in the Appendix.

- Marginal tax rate in the individual's PIT,  $\text{tmg}_{jt}$ . This variable reflects the effect of tax progressiveness on obtaining income. It can also be understood as a proxy for current income.

- The fraction of the rental housing subject to tax relative to the empty household, after the income tax in logarithms<sup>11</sup>,  $\ln Pr_{jt}$ . In order to compute this variable, we have to know the net return rate before-tax,  $i_t^h$ , and the empty housing imputed income rate,  $i_t^f$ .

Assuming that the percentage of external financing is 40 percent of the dwelling value; that the rate of return on individual's capital and the mortgage interest rate are equal (we consider every financial institution's<sup>12</sup> average mortgage interest rate for more than three years for purchasing a free household); that the depreciation, repairs and maintenance expenditures are an annual 3.5 percent of the dwelling value (Rapaport, 1997, Jaén y Molina, 1994, White and White, 1977, Aaron, 1972, Laidler, 1969); and disregarding the capital gains, substituting [6] it is obtained:

$$i_{94}^h = \frac{V(0,1026 - 0,035 - 0,1026 \times 0,4)}{V(1 - 0,4)} = 0.044$$

$$i_{95}^h = \frac{V(0,1101 - 0,035 - 0,1101 \times 0,4)}{V(1 - 0,4)} = 0.0517$$

<sup>10</sup> For the Spanish case, see Barrios and Rodríguez (2005).

<sup>11</sup> The probit model should include the real net of tax return of the rental house for individual  $j$ ,  $r_{jt}^a$ , and the real net of tax return of the empty house,  $r_{jt}^v$ , both of them after the payment of PIT. Nonetheless, since the correlation between these variables is high, as it can be seen in equations [1] and [2], we choose to substitute them by their proportion.

<sup>12</sup> Source: Central Bank of Spain. Year 1994,  $i=10.26$  percent; year 1995,  $i=11.01$  percent; year 1996,  $i=8.17$  percent; year 1997,  $i=6.91$  percent.

$$i_{96}^h = \frac{V(0,0817 - 0,035 - 0,0817 \times 0,4)}{V(1 - 0,4)} = 0.023$$

$$i_{97}^h = \frac{V(0,069 - 0,035 - 0,069 \times 0,4)}{V(1 - 0,4)} = 0.011 \quad [10]$$

where  $V$  is the dwelling market value.

In Spain, empty dwelling produce an annual imputed income of a 2 percent of their fiscal value of housing<sup>13</sup>. Considering a 24 percent as the percentage representing the fiscal value of housing with respect to the market value (Gonzalez-Páramo and Onrubia, 1992, García-Montalvo and Mass, 2000), it is obtained<sup>14</sup>:

$$i^f = \frac{V(0,02 \times 0,24)}{V(1 - 0,4)} = 0.008 \quad [11]$$

In this way, it is possible calculating the proportion in which rental dwelling are taxed with respect to the empty housing before-tax, as:

$$P_t = \frac{i_t^h}{i^f} \quad [12]$$

so that,  $Pr_{jt}$  is equal to:

$$Pr_{jt} = P_t(1 - tm_{jt}) \quad [13]$$

- The logarithm of expected capital gains,  $\ln\pi_{jt}$ : it is defined as the logarithm of the average increment in housing price (measured by Price Index of Housing published by the INE) in the three years previous and subsequent to the corresponding one, which is also included, divided by the average Price Index of Consumer published by the INE for the same period. In order to compute net gains, the taxation of these increases in the personal income tax is subtracted from this amount, assuming that the dwelling remains for one year or less as part of the individual's equity<sup>15</sup>. That is:

$$\ln\pi_{jt} = \ln [\Delta_{medio} \times (1 - tm_{jt})] \quad [14]$$

<sup>13</sup> 1.1 percent in the case of fiscal value of housing revised according to Law 39/1988, December 18, regulating Local Finance and enforced from 01/01/1994. We consider a 2 percent for the period of study.

<sup>14</sup> Given the model's specification, changes in the assumptions used to compute  $i_t^h$  and  $i^f$  only modify the temporal dummy variables' coefficients.

<sup>15</sup> This variable is not defined for wealth gains beyond a year, due to the lack of available data to compute its taxation.

- Choice of tax statement, Statement: a dummy variable showing the choice of tax statement. It takes value zero if the tax statement is individual and one in case of joint tax statement.

#### *Sociodemographic characteristics*

- Individual's age and age-squared.
- Gender of the individual: a dummy variable taking value zero in case the gender is male and one in case it is female.
- Marital status: it is represented by two dummy variables, 'single' and 'married'. They take the value one if the individual is single or married, respectively, and zero otherwise. That is, the reference category is constituted by divorced, separated and widowed individuals.
- Number of children.
- Number of children under three years old: a dummy variable representing the presence of children under three years old.
- Education: it is represented by two dummy variables. The first variable, 'higher education', refers to individuals in possession of a university degree. The second variable is 'secondary education'. The reference category is constituted by individuals with primary education or uneducated.
- Work situation: it is represented by two dummy variables. The first variable, 'non-working', takes the value one when the individual does not have a job and zero otherwise. The second variable, 'working', takes the value one when the individual has a job and zero otherwise.

#### *Results*

Next, we present the estimation's results. Since we estimate a probit model, the coefficients show the direction of the expected change in the dependent variable value when the corresponding independent variable increases in one unit, but they do not reflect the marginal effect of the mentioned change.

[INSERT TABLE 2 HERE]

As it can be seen, all the economic variables, except capital gains, are significant at the usual confidence levels. This indicates the great influence of economic incentives on the decision of renting a house.

Regarding net permanent income, the negative sign of the estimated coefficient shows that there are fewer incentives to rent a second home when the net permanent income increases. Therefore, it is more likely that the second home is kept for individual and family use. This result is obtained after controlling for the rental dwelling return and can be understood as an income effect on the decision of renting second homes.

The income effect is strengthened by the expected variation in the rental housing supply, when there are changes in the marginal rate. If the marginal rate is understood as an approximation of the annual current income, both the increase of annual and permanent income reduce the probability of renting. However, the changes caused by the marginal rate cannot be interpreted in (pure) income effect terms, since they are also reflecting the lower incentives to get gross income, as the marginal rate increases.

The coefficient on  $\text{Ln}(\text{Pr}_{jt})$  is significant and negative, which shows that when the housing's relative taxation is higher, the probabilities of renting are lower. This, together with the fact that the marginal rate coefficient is also significant, shows that taxation significantly affects the decision of renting a dwelling. Therefore, tax reforms modifying these variables will have a significant effect on the number of dwelling for rent introduced into the market. Consequently, there is a clear possibility of increasing the stock of rental housing for rent through a properly designed economic policy.

The renting probabilities also decrease in case the individual selects the joint tax statement.

Regarding capital gains, the coefficient is not significant. This confirms the theoretical model's forecast, which predicts that capital gains do not influence the decision of renting a dwelling.

As for the demographic variables, the probability that the individual decides to rent his second home increases with his age and education. Single or married individuals also have more incentives to rent its dwelling than separated, widowed and divorced individuals. This is probably due to the fact that the latter group may have more incentives to use the second home themselves.

The probabilities of renting decrease in case the individual has children under the age of three and currently works.

With regard to the rest of sociodemographic variables, they turned out to not to be significant.

#### 4. Simulation

Following the results presented in the previous section, this part analyzes the expected changes in the rental housing supply when the relative taxation of the second homes (rental dwelling compared to empty ones) is modified.

The simulations consist of diminishing the value of  $P_t$ , i.e. the relative taxation of rental dwelling is reduced with respect to the empty ones. These changes should increase the supply of second homes to rent and, depending on the demand elasticity, decrease the prices of rental dwelling. We are aware this implies an increase in the gross income of the individuals deciding to rent their dwelling in the short, medium and long term. On the other hand, the expected prices changes would cause a decrease in the gross income of the individuals currently renting their dwelling, particularly in the medium and long-term, as tenancy agreements are renegotiated. Nonetheless, these changes are not taken into account. What is computed is the expected ‘day after’ effect on the supply of second homes to rent when there are changes in the relative taxation of rental dwelling<sup>16</sup>.

Table 3 shows the expected changes in the percentage of second homes to rent when  $P_t$  is decreased in a 25, 50 and 75 percent. Since  $P_t$  takes different values in different years, the expected changes are individually computed for each panel wave. The second column collects the marginal effect of  $P_t$  on the percentage of second homes introduced into the rental market. The negative sign indicates that when the independent variable decreases, as in the case where the relative rental dwelling taxation decreases, there is an increase in rental housing. As the independent variable is defined in logarithm, this marginal effect can be understood as a semi-elasticity. This semi-elasticity fluctuates between a 7 and a 10 percent, depending on the year. For instance, in 1994 it is a 10 percent, which means that when  $P_t$  decreases in a one percent, the quantity of houses to rent increases in a 10 percent. In case  $P_t$  is a 25 percent lower in

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<sup>16</sup> In order to perform behavioural microsimulations taking into account the effects on the incomes of property capital, the gross and net family income and the marginal rate, it is necessary to make some assumption on the renting prices change, which exceeds the purposes of this study.

1994, the supply of houses to rent is estimated to be a 2.5 percent higher (column 3). If it is reduced by half, as it happens from the 2003 taxable period onwards, there is a 5 percent increase (column 4). In case there is a 75 percent drop, the increase is a 7.5 percent (column 5). If it is reduced in a 50 percent, the rental housing percentage is estimated to be a 10.8 percent. So, the supply in the rental market is doubled, which means a significant increase.

[INSERT TABLE 3 HERE]

In table 4, we analyze for the year 1997 the expected changes per deciles of income on the percentage of second homes to rent, for percentage changes in  $P_t$ . As it can be seen, the rental dwelling relative taxation decreases cause gradual increases in the probability of renting for the lower deciles of income. It reaches its maximum near the income distribution median, then it starts decreasing, and finally lightly increases again in the ninth decile. This shows that middle-class incomes are the most sensitive to reforms addressed to the increase of the rental houses taxation.

[INSERT TABLE 4 HERE]

The previous simulations show that the relative taxation of rental housing, compared to empty ones', significantly affects the rental supply. If this relative taxation decreases, there are gradual increases in the supply of rental housing.

## **5. Conclusions and future investigation**

The aim of this article is to analyze the impact of income tax treatment of second homes in the supply of dwelling to rent and to simulate the possible effects of tax reforms. The results obtained show that the income tax has significant effect when deciding to rent a dwelling.

Another important result of this study shows that the middle-class income is the most sensitive one to changes in the taxation of rental housing. The tax reforms addressed to those taxpayers cause a more important increase of the rent supply than other tax brackets.

In the 2003 taxable period two measures encouraging renting are implemented: a 50 percent reduction in the net income of rental housing and a depreciation expenditure increase from a 2 to a 3 percent of the housing purchase value. The latter measure is applied to all leased real estate. According to this article, a 50 percent reduction of the

rental dwelling will double the rent supply. This result can be interpreted as the upper limit of the effects caused by a tax policy in the private and *individual* rental market. On the one hand, such a significant increase in the supply of rental housing causes a considerable drop in the renting prices, counteracting the tax policy effect. On the other hand, the model employed is static, so it does not take into account the changes in income and marginal rates, which will appear when the second homes currently used by their owners are introduced into the market. Finally, we have to bear in mind that there may be geographical imbalance between the demand and the supply of rental housing.

As a consequence, the creation of appropriate tax incentives seems to be an efficient mean of increasing the number of dwelling to rent. The current quantity of empty houses apparently shows that there are not short-term supply constraints in this market.

The paper does not incorporate the effects of the regulations on the supply of rental units. Future research will be done in this sense.

## **Appendix**

[INSERT TABLE A1 HERE]

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