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Article

Taxation of capital gains and Lock-in effect in the Spanish Dual Income Tax

Carlos Díaz Caro[a,*], Eva Crespo Cebada[b]

[a] Departamento de Economía, Facultad de Estudios Empresariales y Turismo, Universidad de Extremadura, Av. Universidad, s/n, 10003 Cáceres, Spain
[b] Departamento de Economía, Escuela de Ingenieras Agrarias, Universidad de Extremadura, Avda. de Adolfo Suárez s/n, 06007 Badajoz, Spain

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ABSTRACT

The aim of this paper is to study the possible change in the individual behaviour of the Spanish taxpayers about the willingness to declare capital gains, *Lock-in effect*, as a consequence of variations in the marginal rate. To do this, a two stages model is proposed to analyze which variables affect both the probability, and the amount, of capital gains declarations. The empirical analysis was performed using the Spanish annual personal income tax return sample from IEF-AEAT (Institute of Fiscal Studies and the Tax Department) for the periods 2006 and 2007, corresponding to the years before and after the reform that introduced a Dual Income Tax in Spain, with a flat tax rate for capital gains tax. The main results show that a 1% increase in the capital gains tax rate reduces the probability of declaring capital gains by around 7.51% (2006) and 8.19% (2007), and the amount of capital gains by around 3.91% (2006) and 5.79% (2007).

Introduction

The well-known *Lock-in effect* on the realization of capital gains *(Lock-in)* is caused by the rate taxation on these incomes.[1] Specifically, there is an inverse relationship between the marginal rate and the realization of capital gains, as shown in theory, taxpayers had a lower desire to realize such gains when the marginal rate payable on these gains was higher. Therefore, investors can temporarily paralyze the realization of capital gains in order to lower their tax bill, which can lead to welfare loss in three ways. Firstly, investors would not be able to carry out an adequate diversification of their investment portfolios as a result of the tax treatment given to each investment (Auerbach, 1988). Secondly, there is a decrease in potential in terms of State tax collection, as these gains are not realized and therefore do not give rise to taxation (Feldstein, Slemrod, & Yitzhaki, 1980). Thirdly, high marginal rates can cause a possible lock-in effect on the realization of future investments (Daunfeldt, Ulrika, & Niklas, 2010; Jacob, 2013; Meade, 1990).

In the last century, modern societies have shown a greater interest in financial markets, thereby increasing the percentage of individual shareholders and therefore promoting potential capital gains. This phenomenon has made the capital gains tax take on special relevance for investment, as well as for financial investment and planning decisions (Jacob, 2013).

Previous studies obtained a negative correlation between the realization of capital gains and the marginal rate applied to them, as economic theory shows, although the results have certain differences. On the one hand, they emphasize the analyzes conducted with cross-sectional data, in which the transitional effect of the behaviour of realization of capital gains is studied, whose results show a greater than one elasticity (Daunfeldt et al., 2010; Feldstein et al., 1980; Jacob, 2013; Minarik, 1981); while on the other hand, in studies based on time series data the permanent effect of taxation is estimated, achieving elasticity values between −0.1 and −0.9 (Auerbach, 1988; Ayers, Craig, & John, 2007; Burman & Randolph, 1994; Gillingham & Greenlees, 1992; Jones, 1989).

Furthermore, the personal income tax of Spanish individuals (hereinafter PIT) underwent a major reform in 2007, both in its structure and main elements. In particular, the reform by Law 35/2006 implements a dual tax rate, which represents an important quantitative change to taxation of capital gains. These have changed to a progressive tax rate if capital gains are generated in a period shorter than one year, and a proportional rate of 15%, for those gains generated in a period of time longer than one year; to a proportional rate of 18% regardless of the time taken to be generated. This change

* Corresponding author.
E-mail address: carlosdc@unex.es (C. Díaz Caro).

[1] Proof of this is the extensive literature on the subject: Ayers et al. (2007); Constantinides (1983); Dai, Edward, Douglas, & Harold (2008); Daunfeldt et al. (2010); Hendershott et al. (1991); Holt and Shelton (1962); Jacob (2013); Klein (1999); Reese (1998); Seltzer (1951).

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in taxation of such income causes a change in its effective rate, and therefore, it is expected to produce effects on the behaviour of taxpayers regarding their realization and amount. Therefore, we consider it appropriate to examine how taxpayers behave to changes in the marginal rate of capital gains caused by changing from a progressive rate and/or fixed rate to a fixed rate regardless of the time when those gains were generated, as a result of the application of the dual reform, both in its realization and quantification.

In addition, an important aspect of this study is the inclusion of micro-data of PIT for the years 2006 and 2007, prepared jointly with the State Agency for Tax Administration (AEAT) and the Institute of Fiscal Studies (IEF), which has the information in the tax return form made by the taxpayer; unlike most research done on the taxation of capital gains, which uses data at business or stock market level to study the possible lock-in effect of capital gains. The advantage of this database is that it allows us to obtain information on the capital gains declared by the taxpayer, as well as the marginal rate which would correspond to each fiscal year, in addition to relevant socio-economic information at individual level. Furthermore, the empirical estimation is performed using a two-stage model in order to avoid sample selection errors. To do so, in the first stage, the probability of obtaining capital gains depending on the marginal rate applied by each taxpayer is calculated and subsequently the factors that influence the amount of capital gains are analyzed, with special relevance on the marginal rate.

After this introduction, the main differences are described in the second section, in terms of taxation, which the implementation of the reform of 2007 on taxation of capital gains involves. Below, the model used in the empirical analysis is described. The fiscal micro-data are presented in the fourth section. The results are given in the fifth section, and finally, the work ends with the conclusions in the sixth section.

Taxation of capital gains in 2006 and 2007

As mentioned in the introduction, the taxation of capital gains suffered a wide change in setting the tax rate applying to this type of income. Therefore, under current legislation for fiscal year 2006, Law 46/2002, it can be obtained that capital gains in a period shorter than one year (short-term capital gains), were taxed in the general tax base, together with other income (income from work, economic activities and returns on capital assets), by applying the appropriate progressive rate.[2] By contrast, those gains which were generated in a period longer than one year (long-term capital gains) were taxed in the special tax base at a proportional rate of 15%.[3] Therefore, this situation generated clear incentives to maintain capital gains for longer than a period of one year, thus benefiting from the proportional tax rate, since the corresponding progressive rate would in any case always be superior.

In addition, capital losses of a given year could be compensated with the gains of the same fiscal year and even with capital losses corresponding to the four previous years.[4]

However, the entry into force of Law 35/2006 implied the introduction of major changes in the structure of the Spanish PIT. More specifically, it is moving towards the structure of dual models, establishing two distinct bases. On the one hand, the general base which includes most of the income taxed by PIT, subject to a progressive rate,[5] and on the other hand, the savings base that taxes both the income generated by investment capital and equity gains[6] at a proportional marginal rate of 18% regardless of the period in which these two returns were generated, so there is no differentiation between short and long term equity gains. This type of dual model differs from the pure dual structure defined by Sørensen (1994, 1998), which does not specifically tax all capital income (assets, non-financial investment capital and equity gains from non-transfer assets) at a proportional rate, as well as not aligning the proportional marginal tax rates and the minimum of the progressive rate and regarding income from economic activities, it does not differentiate the part of the income from the working source and the income from capital. However, with this reform, the previous incentive to maintain capital gains over a period exceeding one year disappears and is also detrimental to capital gains realized over a period of time longer than one year, taxing them 3 percentage points higher (15–18%). Reduction or amortization coefficients applicable to the resulting capitals are also removed, which is a relevant issue, as depending on the year in which the asset was acquired, it could get a reduction of up to 100% of the resulting gain.

Therefore, from the entry into force of the new law, capital gains obtained once this regulation was implemented, cannot benefit from these reduction coefficients. However, these reduction or amortization coefficients can be applied to the portion of the capital gains that were generated from the purchase date until January 19, 2006,[7] not being applicable to the rest of the period.

Finally, an important issue which led to this reform was the announcement with time in advance to reorganize and plan the taxpayer's assets and equity elements prior to the reform and increase in tax rates in many cases. Specifically, the Law was published on November 29, 2006, with prior announcement. Therefore, this effect produces a possible reorganization and transformation among different sources of income as stated by some authors (López-Laborda, Vallés, & Zárate, 2014).

Empirical model

Each fiscal year, taxpayers can choose to realize or not capital gains, and therefore are taxed or not for realizing them. This choice is an issue of censorship in the empirical estimation, so the probability of realizing gains has to be estimated for any taxpayer in the first stage and then the factors and to what extent they affect the amount of gains realized have to be determined, if performing the realization effectively occurs. The so-called two-stage models can incorporate these two sequences. The implementation of the two stage model proposed by Heckman (1979) enables to solve two problems in the estimation. On the one hand, data censorship and on the other hand the data sample selection caused by restricting the sample in the second stage only to those taxpayers who declare a capital gain. The proposed model by Heckman consists of estimating a "probit" model in the first step, to obtain the probability of

[2] The progressive rate corresponding to fiscal year 2006 is made up of five brackets, with a marginal rate which goes from 15% to 45% (15–24–28–37–45%).

[3] Capital gains generated in a period shorter than one year could offset each other in 2006. They can also compensate with the rest of income that make up the General Tax Base with a limit of 10% of the positive balance of other income. Therefore, short and long term gains and losses could not be compensated with each other in 2006. In 2007, capital gains and losses not arising from the transfer of assets can offset up to a limit of 25% of the sum of returns of the General Tax Base. In 2007, capital gains and losses could be offset regardless of the time in which they were generated.

[4] Capital gains generated by the transfer of the main residence, on the condition that the amount obtained would be invested in another main residence, were exempt both in 2006 and 2007.

[5] The progressive rate for 2007 is composed of four brackets, 24–28–37–43%, although one of the most significant aspects of the reform is the change introduced in the personal minimum and family minimum, which changes from being a reduction in the tax base to a deduction in the gross tax payable.

[6] There are some equity gains which are included in the general base, which among others are prizes obtained from games or raffles; subsidies or aid granted to the main residence or public subsidies for owners of Spanish Historic Heritage.

[7] Fulfilling certain requirements under the ninth transitional provision of Law 35/2006 of PIT.