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The effect of capital gains taxation on home sales: Evidence from the Taxpayer Relief Act of 1997

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ABSTRACT

The Taxpayer Relief Act of 1997 (TRA97) significantly changed the tax treatment of housing capital gains in the United States. Before 1997, homeowners were subject to capital gains taxation when they sold their houses unless they purchased replacement homes of equal or greater value. Since 1997, homeowners can exclude capital gains of $500,000 (or $250,000 for single filers) when they sell their houses. Such dramatic changes provide a good opportunity to study the lock-in effect of capital gains taxation on home sales. Using 1982–2008 transaction data on single-family houses in 16 affluent towns within the Boston metropolitan area, I find that TRA97 reversed the lock-in effect of capital gains taxes on houses with low and moderate capital gains. Specifically, the semiannual sales rate of houses with positive gains up to $500,000 increased by 0.40–0.62 percentage points after TRA97, representing a 19–24% increase from the pre-TRA97 baseline sales rate. In contrast, I do not find TRA97 to have a significant effect on houses with gains above $500,000. Moreover, the short-term effect of TRA97 is much larger than the long-term effect, suggesting that many previously locked-in homeowners took advantage of the exclusions immediately after TRA97. In addition, I exploit the 2001 and 2003 legislative changes in the capital gains tax rate to estimate the tax elasticity of home sales during the post-TRA97 period. The estimation results suggest that a $10,000 increase in capital gains taxes reduces the semiannual home sales rate by about 0.1–0.2 percentage points, or 6–13% from the post-TRA97 average sales rate.

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1. Introduction

In the United States, capital gains are generally taxed upon realization and appreciated assets are not subject to taxation when transferred by bequest. These features of capital gains taxation may lead individuals to hold their assets for a longer time than they otherwise would. Economists have long recognized such a potential lock-in effect of capital gains taxation in financial markets. However, very few empirical studies have examined the lock-in effect of capital gains taxation in housing markets. The Taxpayers Relief Act of 1997 (TRA97) has generated the largest changes in the tax treatment of housing capital gains since the late 1970s, and therefore, serves as a natural experiment for researchers to study the impact of capital gains taxation on housing markets.

Prior to TRA97, homeowners had to pay capital gains taxes when they sold their homes unless they resorted to the “roll-over rule” or the “age-55 rule.” The roll-over rule allowed a home seller to postpone his capital gains provided that he bought another home of equal or greater value within two years. The age-55 rule allowed home sellers of age 55 or older to claim a one-time exclusion of $125,000 against their capital gains. The pre-TRA97 capital gains taxation had been criticized for its complexity and potentially large distortions of homeowners' mobility and housing consumption decisions. For example, Burman et al. (1996) showed that the pre-TRA97 capital gains taxation discouraged renting and moving to less expensive homes while raising little revenue.

TRA97 abolished both the roll-over rule and the age-55 rule. Instead, homeowners can exclude capital gains of $500,000 (or $250,000 for single filers) when they sell their homes after TRA97, and they can potentially claim such an exclusion as often as every two years. Using public survey data, Farnham (2006), Biehl and Hoyt (2007), and Cunningham and Engelhardt (2008) find evidence suggesting that capital gains taxes during the pre-TRA97 period locked-in many homeowners and that TRA97 released such lock-in effects. For example, Cunningham and Engelhardt (2008) showed that the mobility rate of under-55 homeowners increased significantly after TRA97.

In this paper, I use housing transaction data to study the effect of capital gains taxation on home sales. More specifically, I construct a panel of single-family houses using the 1982–2008 sales records and ZIP code level house price indices in 16 affluent cities and towns within the Boston metropolitan area. The data set does not have information on individual characteristics such as age, income, and marital status, but it has accurate information on the dates and prices of home sales. To identify the effect of capital gains taxation on home sales, I exploit the cross-sectional variation in accumulated capital

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gains and the arguably exogenous change in exclusion levels introduced by TRA97. I also exploit legislative changes in capital gains tax rates in 2001 and 2003 to estimate the tax elasticity of home sales during the post-TRA97 period. This paper contributes to the existing literature by using a unique data set and exploiting sources of variation different from previous research.

A number of interesting findings emerge from my analysis. First, among homeowners with capital gains between $0 and $500,000, TRA97 increased the semiannual sales rate by 0.40–0.62 percentage points on average after TRA97, or 19–24% from the pre-TRA97 baseline levels. The short-term effect is particularly large, with the sales rate jumping 70–81% in the three years immediately after TRA97. Second, among homeowners with capital gains above $500,000, I do not find TRA97 to have a significant effect on home sales in the long-run, although the sales rate increased by 51% in the three years immediately after TRA97. Lastly, estimation results on the tax elasticity of home sales during the post-TRA97 period suggest that a $10,000 increase in capital gains taxes lowers the semiannual home sales rate by 0.1–0.2 percentage points, or 6–13% from the average sales rate in the post-TRA97 sample. Taken together, I find empirical evidence consistent with the theoretical prediction that housing capital gains taxation has a lock-in effect on homeowners.

Even though house prices in the United States have dropped significantly since 2006, the economic impact of housing capital gains taxation is likely to remain important for three reasons. First, capital gains exclusions are defined in nominal terms and many homeowners will eventually find themselves with more than $500,000 housing capital gains. Second, capital gains tax rates may increase after the Jobs and Growth Tax Relief Reconciliation Act of 2003 expires in 2011, which could potentially affect housing markets nationwide. Third, tens of millions of baby-boomers are entering retirement age and are considering selling their homes to reduce housing consumption. Capital gains taxes will become relevant to many of them since they tend to have lived in their homes for decades and have accumulated sizable gains.

The rest of this paper proceeds as follows. Section 2 introduces the background on housing capital gains taxation and illustrates how TRA97 may affect home sales. In Section 3, I describe the data used in this paper. I then explain my empirical strategy, discuss estimation results, and show robustness checks and extensions in Section 4. The last section concludes.

2. Background

2.1. Tax Law

TRA97 greatly simplified the tax treatment of housing capital gains. Before 1997, a home seller was subject to capital gains taxation if the selling price net of selling expenses exceeded the adjusted basis of the home. The adjusted basis is defined as purchase price plus purchase costs (e.g. settlement fees and closing costs) and the cost of improvements and additions.[1] However, if the home seller bought a replacement home of equal or greater value within a four-year window, which started two years before and ended two years after the date of the sale, he would postpone the capital gains taxes until the next time he sells his home. If the replacement home value was between the purchase price and the selling price of the current home, the difference between the replacement home value and the selling price of the current home would result in immediate taxes, and the difference between the replacement home value and the purchase price of the current home would be postponed. The amount of postponed capital gains would be subtracted from the basis of the newly purchased replacement home. This tax provision, unofficially called the "roll-over rule," had been in the Internal Revenue Code since 1951. Hoyt and Rosenthal (1990, 1992) showed that the roll-over rule generated "kinks" in home sellers' budget sets and encouraged individuals to consume more housing than they otherwise would have.

In addition to the roll-over rule, the Internal Revenue Code also featured preferential tax treatment for older home sellers before TRA97. Beginning in 1964, homeowners aged 65 and over who had lived in their homes for at least five out of the past eight years could claim a once-in-a-lifetime exclusion of up to $20,000 against taxable capital gains.[2] The maximum exclusion amount was raised to $35,000 in 1976. In 1978, the age requirement was lowered to 55, the residence requirement was changed from living in the home for at least five out of previous eight years to three out of previous five years, and the maximum exemption amount was raised to $100,000.[3] Newman and Reschevsky (1987) show that the annual mobility rate of homeowners 55 to 64 years old increased after the 1978 reform. In 1981, the maximum exclusion amount was raised to $125,000. This "age-55 rule" remained unchanged until TRA97.[4]

TRA97 was signed into law on August 5, 1997. Effective for sales after May 6, 1997, it fundamentally altered the tax treatment of housing capital gains. First, TRA97 eliminated the roll-over rule. Second, it eliminated the age-55 rule. Third, it allowed home sellers to exclude housing capital gains of $500,000 (or $250,000 for single filers) if they have owned and lived in their homes for at least two years of the previous five years. There is no limit on how many times one can claim such exclusions during one's lifetime.[5] Finally, TRA97 lowered the top tax rates on long-term capital gains (defined as capital gains on assets held at least 12 months) from 28% to 20%.

Capital gains tax rates have been changed many times since 1981. Before the Tax Reform Act of 1986, the top marginal tax rate was 20%. The Tax Reform Act of 1986 raised it to 28%, although effective tax rates exceeded 28% for many high-income taxpayers because of interactions with other tax provisions. TRA97 reduced capital gains tax rates and introduced a separate rate schedule for long-term gains. Beginning May 7, 1997, the top rate on long-term capital gains was 20%. The Economic Growth and Tax Relief Reconciliation Act of 2001 lowered the top rate on assets held for at least five years to 18%. The Jobs and Growth Tax Relief Reconciliation Act of 2003 lowered the top capital gains tax rate further to 15%. Fig. 1 summarizes the key changes in housing capital gains taxation from 1981 to 2008.

2.2. Theoretical predictions

To evaluate the impact of TRA97 on home sales, we need to analyze how homeowners with different levels of capital gains and with different desired replacement homes are affected differently by TRA97. Suppose a homeowner bought his house at time 0 when the per-unit house price was p_0. Let H denote the amount of housing purchased by this homeowner. At time t, the per-unit housing price is p_t, and the homeowner considers selling his house. In the event that he sells his house at time t, he would like to purchase a replacement home of quantity H' at price p_t. If his replacement home is a rental housing unit, $H' = 0$. To simplify the analysis, I ignore the age-55 rule and only consider married couples for the moment. I will discuss the

[1] According the IRS rules, the cost of improvements and additions can be added to the adjusted basis, whereas the cost of repairs cannot. IRS publication 523 has more details on the distinction.

[2] The exclusion amount equalled the total capital gain if the sales price was less or equal to $20,000. For homes selling for more, the excludable portion was calculated by multiplying the capital gains by the ratio of $20,000 to the sales price.

[3] This $100,000 exclusion did not depend on the sales price.

[4] This one-time exclusion was $125,000 for both single filers and married joint filers. Married separate filers, however, had a one-time exclusion of only $62,500. In addition, the exclusion could only be used once-in-a-lifetime and no balance could be carried forward for a future sale.

[5] The required two years of ownership and use during the five-year period ending on the date of the sale do not have to be continuous. In fact, one can even claim the capital gains exclusion on a second-home, as long as the ownership and use tests are met.

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