

# Do people respond to tax incentives? An analysis of the Italian reform of the deductibility of home mortgage interests

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## Abstract

Before 1992 mortgage interests in Italy were fully tax deductible up to 3500 Euro (7000 for two cosigners). In 1992–1994 the government implemented a series of tax reforms whose ultimate effect was to eliminate the relation between the after-tax mortgage rate and the marginal tax rate. Using data from the 1989–2002 Survey of Household Income and Wealth we test if the elimination of incentives has affected the sensitivity of the decision to borrow and the amount borrowed with respect to the marginal tax rate. Regression analysis and difference-in-differences estimates indicate that tax considerations have not affected the demand for mortgage debt, neither at the extensive nor intensive margin. These results are consistent with lack of financial information and credit rationing during the sample period.

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## 1. Introduction

The theory of portfolio taxation suggests that investors' portfolio choices are affected by the after-tax returns on each asset, and that the differing fiscal treatment of the various assets creates wedges in the structure of the returns. The empirical literature for the US, as summarized by [Poterba \(2002\)](#), appears to support the view that taxes affect asset selection and allocation. Studies on households' response to changes in the tax treatments of debt are far more limited ([Maki, 2001](#)).

The main limitation of empirical studies has been that of identifying the tax effects. Theory predicts that the decisions to borrow (or to invest in a given asset) and how much to borrow are affected, among other variables, by the after-tax interest rate on borrowing. However, since the after-tax borrowing rate depends on the taxpayer's marginal income tax rate, which is inherently correlated with the level of income, in a cross-sectional framework it is difficult to disentangle genuine variation in after-tax interest rates, for given income, from genuine variations in income, for given after-tax interest rates. In the absence of tax incentives this is actually impossible if, at any point in time, all borrowers face the same interest rate. When the interest rate varies across borrowers, it is generally not observed. And even when it is observed, cross-sectional variability in the price of borrowing tends to be correlated with other household characteristics.

In this paper we address the issue of identification of tax effects by exploiting cross-sectional and time-series evidence in the after-tax rate induced by exogenous policy changes, rather than (possibly endogenous) shifts in the income distribution. The change that we consider is the elimination of tax incentives in the Italian mortgage market for borrowers with high marginal tax rates.

Most OECD countries allow mortgage interests deductions for first-time homeowners ([Poterba, 2002](#)). We bring new evidence to the portfolio effect of the tax treatment of household liabilities by studying the effect of changes in the tax treatment of Italian mortgages on the propensity to borrow and on the amount borrowed. The data we use, a series of repeated cross-sections drawn from the 1989–2002 Bank of Italy Survey of Household Income and Wealth (SHIW), are representative of the Italian population, include information on household mortgage debt, after-tax income and demographic variables, and cover a period of rapid credit market expansion.

The richness of our data and the features of the tax reform provide a truly unique setting for spotlighting the effect of tax incentives on borrowing in particular, and on household portfolio selection and allocation more generally. From 1982 to 1992 mortgage interests on the principal residence were fully tax-deductible up to approximately 3500 Euro (7 million lire). To get a sense of the magnitudes involved, an individual borrowing 50,000 Euro at the 10 percent interest rate for 20 years was able to deduct *all* interests on his loan. In this regime, the tax incentive was proportional to the borrower's marginal tax rate. During our sample period, the marginal tax rate was between 10 and 50 percent (see Section 3 for more details). For someone with a marginal tax rate of 10 percent, the tax incentive implied a reduction in the after-tax mortgage rate of only 1 percentage point. But for someone with a marginal tax rate of 33 percent, the reduction was 3.3 points (from 10 to 6.7 percent), while if the marginal tax rate was 50 percent, the after tax mortgage rate was reduced by 5 points (from 10 to 5 percent).

Following a sharp overhaul of the tax incentive system, in 1992 the link with the marginal tax rate was broken, and the incentive made proportional—up to the unchanged

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