

行政院國家科學委員會專題研究計畫 成果報告

財產稅的資本稅觀點與受益觀點之選擇

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# 行政院國家科學委員會補助專題研究計畫成果報告

## 財產稅的資本稅觀點與受益觀點之選擇 Choosing between the Capital Tax View and Benefit View of the Property Tax

計畫類別： 個別型計畫          整合型計畫

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# 行政院國家科學委員會補助專題研究計畫成果報告

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### Choosing between the Capital Tax View and Benefit View of the Property Tax

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#### 中文摘要

財產稅的租稅歸宿一直是地方財政學中最/受爭議的議題之一。主流財政理論中對於財產稅之租稅歸宿問題，主要包括以下三種觀點：「傳統觀點」視財產稅為一種消費稅；「受益觀點」認為財產稅不過只是對地方公共財所付出的一種使用者付費；而「新觀點」則視財產稅為一種對資本使用具有扭曲效果的資本稅。雖然學界一般已有共識，認為傳統的觀點不過是新觀點下的一個特例。但是，對於新觀點與受益觀點何者較為接近現實，卻仍爭議不休。由於此二觀點各有其理論基礎，而目前的實證文獻並未提供足夠的證據支持其中任何一種觀點。本文的主要目的就是要對此一議題提供新的證據，檢驗此二觀點的有效性。本文依據台北市地區之租屋市場及房地產市場的資料，發現(1)資本密度將隨房屋稅有效稅率的提高而增加，而地價稅對資本密度的影響並不顯著，支持新觀點的看法；(2)在 Hedonic 模型中，房屋稅有過度轉嫁給租屋者的現象，而地價稅的轉嫁效果則不顯著，也傾向支持新觀點的看法；(3)而根據 Palmon and Smith (1998b) 的修正資本化模型所估計的資本化程度，則發現房屋稅及地價稅都有過度資本化的情形，同樣也無法拒絕新觀點的看法。

關鍵詞：財產稅、租稅歸宿、租稅資本化、Hedonic 模型、租稅移轉

#### 1. Abstract

The incidence of the property tax is still one of the more controversial issue in local public finance. The three mainstream views of the incidence of the property tax include—the *tradition view* which treats the tax as an excise tax, *the benefit view* which argues that the property tax is simply a user charge for local public services, and *the new view* which treats the property tax as a tax on capital with a distortionary effect on the use of capital. Although it is easy to show that the traditional view is simply a special case of the new view, it is, however, difficult to choose between the new view and the benefit view in that both views have their own theoretical underpinnings and current empirical studies in the literature provide little evidence to support either view. The purpose of this paper is to provide such empirical evidence, using data from the rental housing and real estate markets of Taipei city, to distinguish between these two views. We found that (1) capital intensity is increasing in effective ax rate of house tax and is insignificant in the change of effective tax rate of land value tax; (2) according to the hedonic regression model, the house tax will over-shift forward to tenants and tax on land value has no significant impact on rent; and (3) by Palmon and Smith's (1998b) modified capitalization model, both taxes are overcapitalized into house values. All of these results suggest that the evidence seem to favor the new view.

Keywords: Property taxation; Tax incidence; Tax capitalization; Hedonic Model; Tax Shifting

## 2. Motivation

The incidence of the property tax is still one of the more controversial issue in local public finance. Three mainstream views of the incidence of the property tax include: (1) *the tradition view* treats the tax as an excise tax, so that it is fully shifted forward to renters in the form of higher rents; (2) *the benefit view* argues that the property tax is simply a user charge for local public services, thus the incidence of property tax is of much less concern under this view; and (3) *the new view* treats the property tax as a tax on capital which has a distortionary effect on the use of capital within a local jurisdiction. Although it has been recognized that the traditional view is simply a special case of the new view, it is, however, difficult to choose between the new view and the benefit view in that both views have their own theoretical underpinnings and current empirical studies in the literature provide little evidence to support either view.

In a recent survey article, Zodrow (2001) reviews the ongoing debate regarding the incidence of the property tax and proposes two empirical approaches about intra-jurisdictional capitalization to differentiate between these two views. Zodrow argues that since these two views have quite different predictions on the effects of the tax, there are, at least, two effective empirical tests that can be used to distinguish between them. The first one is to identify the effects of property tax differentials on *capital intensity and property values*. The new view implies that relatively high levels of property taxation should discourage mobile capital accumulated within a local jurisdiction, resulting in lower capital intensity. On the other hand, the benefit view which views the property tax as a user charge for local public services received implies that the capital intensity should be independent of the level of property taxation. Moreover, under the

capital tax view, capital outflow from a relatively high tax jurisdiction results in lower land and property values. In contrast, under the benefit view, a relative high property tax should not affect aggregate land and property values as long as the capitalization effects of property tax and local public services received cancel out.

The second test is to identify the effects of property tax differential on *housing rents*. Under the benefit view, an increase in property taxes will be *fully* reflected in a higher housing rents, as long as the benefits received by renters equal the cost of the services being financed. In comparison, under the capital tax view, an increase in property taxes will be *partly* forward shifted to renters, resulting in higher rents. The extent of tax shifting depends on the relative elasticities of demand and supply of rental housing. Notice that the part of property tax on land will be *fully* backward shifted to landowners, resulting in a lower return to landowners.

The purpose of this paper is to obtain some empirical evidence that may provide us with conclusive supports for either views of the property taxes. Since the data of property taxes available in Taiwan has been classified into a land value tax and a house tax, both effective tax rates can be measured and used to perform aforementioned tests for our purpose.

## 3. Results

In order to distinguish between the capital tax view and the benefit view of property, three tests are conducted.

### Test of Capital Intensity

For the test of capital intensity, i.e., capital-land ratio, we use the ratio of living area of the house and land lot size as a proxy and effective rates of house tax and land value tax as the main regressors. The effects on capital intensity are estimated by using the OLS method and the result is presented in Table 1.

The result shows that that the capital intensity is very sensitive to effective tax rate of house tax and is not responded to the

effective tax rate of land value tax. This indicates that taxes on capital do actually affect the intensity of capital use; and hence, the evidence seems to favor the new view.

#### Test of Housing Rent

As to the effects of property tax differentials on housing rent, they are estimated by a hedonic regression model. Under the capital tax view, the null hypothesis in this test are that the extent of tax shifting of land value tax ( $\alpha_1$ ) is zero and that the extent of tax shifting of house tax ( $\alpha_2$ ) is nonzero ( $\alpha_2$  should be between 0 and 1). Under the benefit view, the null hypothesis will be both the extent of tax shifting of land value tax ( $\alpha_1$ ) and house tax ( $\alpha_2$ ) are unity. The estimation is summarized in Table 2.

The results show that house tax over-shifts forward to tenants, and there is no significant effect of land value tax on housing rent. Therefore, this empirical evidence seems to favor the new view again, although the new view suggests partial shifting of house tax.

#### Estimation of the extent of Tax Capitalization

In this stage of estimation, we first use the data from the rental housing market to estimate those rents of trading properties in the real estate market with trade using the OLS estimators. Adopting the type of modified capitalization model of Palmon and Smith (1998b), we estimate the capitalization rates ( $\beta_1$  and  $\beta_2$ ) of both taxes. Under the capital tax view, the null hypothesis are that the capitalization rate of land value tax ( $\beta_1$ ) is unity and that the capitalization of house tax ( $\beta_2$ ) is non-unity. Under the benefit view, the null hypothesis are that both the capitalization rates of land value tax ( $\beta_1$ ) and house tax ( $\beta_2$ ) are zero. The results of the estimation is showed in Table 3.

Although the extents of property tax capitalization of both taxes present a severe over-capitalization in the trading real estate market and we don't really know what makes this result and why it is so, yet it also suggests that the new view can not be rejected in this case.

## 4. Self-Evaluation

This study tries to provide empirical evidence of the important issue in local public finance, namely, the distinction between the capital tax view and the benefit view of property tax incidence.

Although we have face the puzzle that why over-capitalization is so severe in the real estate market of Taipei city, we do provide the evidence that supports the new view of tax incidence of the property tax. This will be the main contribution of this study. We have completely accomplished the goal of this project, and we think this paper is suitable to be submitted to the *National Tax Journal* or the *Journal of Public Economics*.

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**Table 1****The Effects on Capital Intensity**

Coefficient of Variables	Estimate (t-statistic)
Intercept	0.0737 (0.15)
Effective tax rate of house tax (%)	23.49* (6.24)
Effective tax rate of land value tax (%)	0.2847 (0.09)
Age of the house (years)	0.0475* (3.72)
Floor of the house on the building	0.0223 (0.54)
Height of the building	0.2955* (6.72)
Distance from the CBD (100 meters)	-0.0063* (-2.09)
Adjusted $R^2 = 0.2274$	

**Table 2****The Effects on Housing Rent**

Coefficient of Variables	Estimate (t-statistic)
Intercept	-21367* (-6.39)
House tax ( $\alpha_1$ )	2.63* (8.80)
Land value tax ( $\alpha_2$ )	-0.38 (-1.07)
Age of the house (years)	-1467* (-22.66)
Floor of the house on the building	-5278* (-26.75)
Height of the building	8019* (33.76)
Distance from the CBD (100 meters)	-891* (-56.27)
Parking	42723* (37.38)
Living area (square meter)	4091* (111.28)
Square of living area	-11.51* (-89.96)
Adjusted $R^2 = 0.9695$	

**Table 3****The Estimation of Extents of Property Tax Capitalization**

Coefficient of Variables	Estimate (t-statistic)
Intercept	0.0541* (31.90)
Effective tax rate of house tax ( $\beta_1$ )	25.74* (24.20)
Effective tax rate of land value tax ( $\beta_2$ )	3.08* (3.27)
Age of the house (years)	-0.000224* (-6.14)
Floor of the house on the building	-0.000347* (-2.98)
Height of the building	-0.00800* (-6.44)
Distance from the CBD (100 meters)	-0.00000043* (-5.13)
Living area (square meter)	-0.000151* (-21.80)
Adjusted $R^2 = 0.5521$	