

*Working Paper*

## **75 Years of Research on the Property Tax**

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## ***75 YEARS OF RESEARCH ON THE PROPERTY TAX***

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*Abstract: This paper examines the evolution of academic research on the effects of the property tax over the past 75 years, with a special emphasis on articles that have appeared in the National Tax Journal over that time period. The primary topics covered are property tax relief in the form of property tax limitations, property tax administration with a focus on assessment practices and assessment inequities, and – the topic that receives the most attention – the critical and longstanding debate on whether the incidence of the property tax is best described by the “capital tax view” or the “benefit tax view.”*

*Keywords: property tax, property tax limitations, property tax administration, property tax incidence, capital tax view, benefit view*

*JEL Codes: H20, H22, H24*

## I. OVERVIEW

It is a pleasure and a privilege to participate in this *NTJ Forum* celebrating 75 years of the *National Tax Journal* – as it was to serve as editor of the *NTJ* from 2007 to 2016, alongside Therese McGuire for the first of those years, and Bill Gentry for the remaining nine years. The *National Tax Journal* is of course the flagship journal of the National Tax Association and serving at its helm for a ten-year stint was a stimulating and rewarding experience.

As described in the accompanying paper by Altshuler, Dickert-Conlin, Gentry, and McGuire (2023), the *NTJ* has always paid a great deal of attention to state and local tax issues. For my contribution to this *NTJ Forum*, I would like to focus on a specific topic in the state and local arena – the local property tax – and discuss the evolution of research on the tax as it has developed in the *NTJ* as well as in other top research publications. I believe the literature on the property tax provides an excellent example of how the *National Tax Journal* plays a critical role in advancing our understanding of public economics, providing in-depth coverage of a wide range of crucial issues, including topics – such as those involving administrative, legal, and policy issues – that are typically not the focus of the academic literature. The papers that have appeared in the *NTJ* include state-of-the-art research, often involving innovative empirical studies, as well as comprehensive expositions of the literature examining key issues from a variety of perspectives – all well written and easily accessible to the broad multidisciplinary audience that characterizes the readership of the *NTJ*. I shall also comment on some of the directions for future research on the effects of the property tax, much of which I fully expect will also appear on the pages of the *NTJ*.

The property tax has always been a controversial tax, eliciting strong opinions on its advantages and disadvantages, dating back at least to Seligman (1905, p. 61) who characterized

it as “one of the worst taxes known in the civilized world.”<sup>1</sup> An earlier *NTJ* editor, Frederick Stocker (1991, p. 1), was also rather unequivocal on its merits, arguing that the property tax “resembles a structure designed by a mad architect, erected on a shaky foundation by an incompetent builder, and made worse by the well-intentioned repair work of hordes of amateur tinkerers.”<sup>2</sup> A much more nuanced view was provided some 25 years later in a comprehensive overview of the tax in a book entitled *A Good Tax* by Joan Youngman (2016, p. 14), who concluded that that property tax was “...not a perfect tax, but... has important strengths... [it is] a visible and transparent levy... [that provides a] link between local payments and local services ... [and] allows local governments a measure of fiscal independence.” In addition, on the vexing question of the incidence of the tax, Oates and Fischel (2016, p. 415) in an *NTJ* Forum devoted to the topic observe that, “Our understanding of the incidence of local property taxes is in a sad state ... Despite ... books and papers stretching over a period of nearly 50 years ...”

It is thus not surprising that the property tax has been a popular topic for the *NTJ*, with more than 170 articles in which the tax was a primary item of investigation appearing over the 75 years of publication of the *NTJ*, from articles in 1948, the year of its inception, on the quality of property tax administration and a discussion of the proceedings of a conference on how to improve the tax, to an article on achieving economies of scale in property assessment in the

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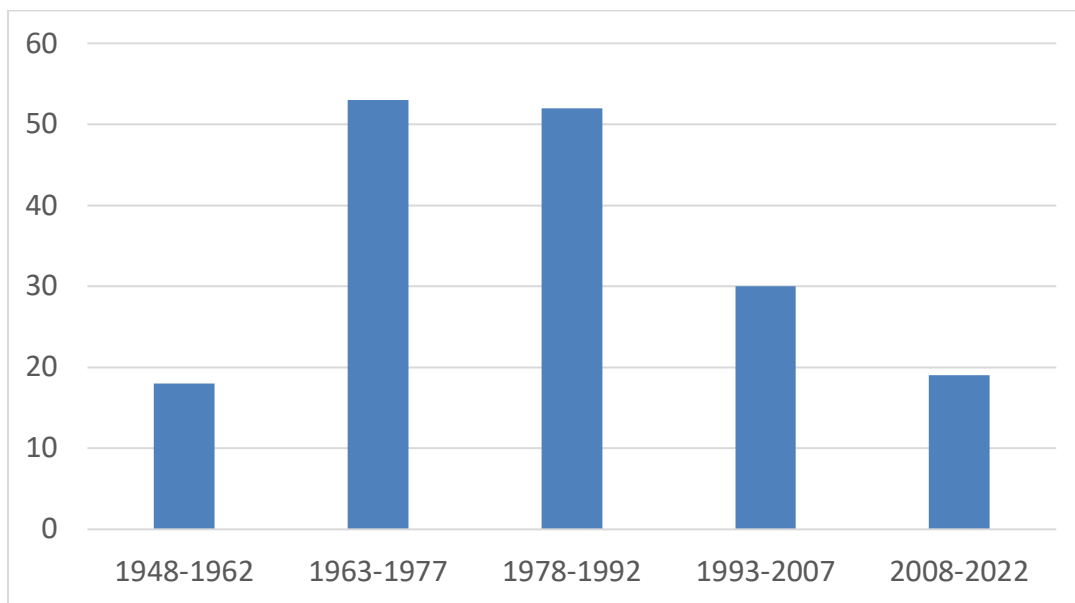
<sup>1</sup> To be fair (as pointed out to me by the well-known expert on the property tax, Joan Youngman), Seligman was referring to a general property tax that applied not only to real property but also personal property, including both tangible and intangible assets, that was much more difficult to tax and resulted in a tax that was impossible to administer/enforce uniformly and fairly.

<sup>2</sup> Public opinion polls have historically found that the property tax is the least popular tax in the United States. However, the property tax was surpassed by the federal income tax in a recent Gallup poll, which found that 34 percent of the population in the United States felt that the federal income tax was the worst (least fair) tax, compared to 29 percent of the population that felt that distinction belonged to the local property tax; for further details, see Gallup, Jeffrey M. Jones, May 19, 2023, “Americans’ Views of Federal Income Taxes Worsen,” <https://news.gallup.com/poll/505970/americans-views-federal-income-taxes-worsen.aspx>.

March, 2023 issue. As shown in Figure 1, there was a surge of interest in the property tax in the period from the early 1960s to the early 1990s (over 100 articles in the 30 years from 1963 to 1992), a period that coincided with the development of the “new view” of the incidence of the tax by Peter Mieszkowski (1972) and widespread interest in property tax limitations sparked by the passage in 1978 of Proposition 13 in California. The number of property tax articles has declined since then, with the most recent 15-year period having roughly the same publication rate of nearly 20 articles as the initial 15-year period starting in 1948.

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**Figure 1**  
*NTJ* Articles on the Property Tax Over Time



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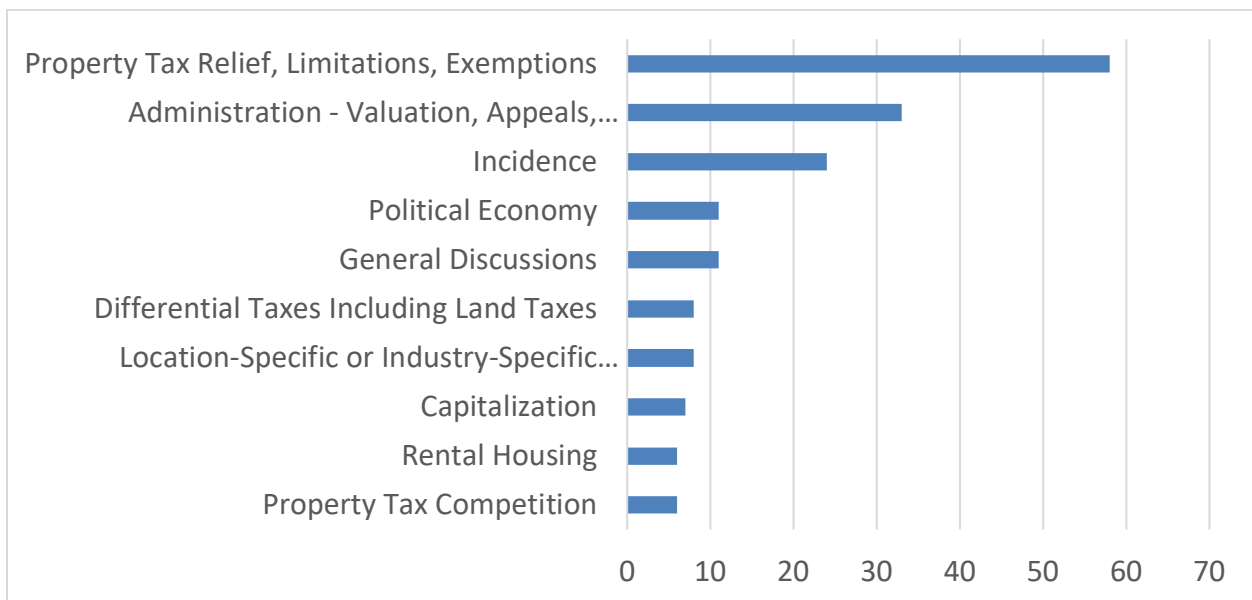
As shown in Figure 2, a wide variety of topics have been covered in these articles, including some that normally would not be addressed in a purely academic journal. Indeed, the most popular topic by a considerable margin are analyses of the various measures of providing

relief from the burden of the tax, including various types of property tax limitations and exemptions. Also popular are questions of the administration of the tax, especially assessment practices, as well as the determination of its incidence. Eleven articles addressed the political economy of property taxes or were general discussions of the tax. Finally, there is a smattering of articles on differential property taxes including those assessed on land, various location-specific or industry-specific studies, investigations of the extent to which the tax is capitalized in housing prices, analyses of the effects of the tax on rental housing, and articles examining property tax competition. In what follows, I shall discuss the evolution of thought on several of these topics – with a special focus on the critical and longstanding issue of the incidence of the tax – emphasizing the contributions of key articles that have appeared in the *NTJ*, which are shown in bold face the first time they are mentioned in the text.

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**Figure 2**

Topics of *NTJ* Property Tax Articles



## II. PROPERTY TAX RELIEF – TAX LIMITATIONS

Most of the research on property tax relief has focused on property tax limitations. Such limitations are widespread in the United States, with some form of state limitation in effect in at least 46 states and the District of Columbia (Kenyon, Paquin, and Reschovsky, 2022). Limitations typically take one of three forms – a limit on the tax rate, on the increase in property assessments, or on total property tax revenues (or the “levy”).

Many of the most cited articles on property tax limitations have appeared in the *NTJ*.<sup>3</sup> The measure receiving by far the most attention is the pathbreaking Proposition 13 passed in 1978 in California, which rolled back property assessments to 1975 levels, provided for reassessment only upon sale apart from a 2 percent annual increase in assessed value, reduced the property tax rate to 1 percent, and required support of at least two-thirds of the state legislature for increases in state taxes and two-thirds of local voters for increases in alternative local taxes. The cumulative effect of these provisions was huge – resulting in a reduction in property tax revenues of 57 percent or 37 percent of own-source local revenues<sup>4</sup> – and Proposition 13 was the topic of a special issue of the *NTJ* that appeared in June 1979.

Opinions differ on the underlying causes of Proposition 13. **Oakland (1979)** argues that the passage of Proposition 13 was a reaction to excessive public spending beyond the levels demanded by residents, coupled with a shift of property tax burdens from businesses to homeowners due to rapidly increasing home prices and the existence of a significant state surplus. Similarly, **Brennan and Buchanan (1979)** view Proposition 13 as an effort by the citizenry to limit spending by Leviathan local governments. In addition, Oakland notes that since

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<sup>3</sup> For a comprehensive survey of state-imposed property tax limitations in the United States, see Paquin (2015).

<sup>4</sup> These estimates are from Oakland (1979).

most of the lost local revenues were replaced by state revenues, the primary effect was not on expenditures but on the mix of state and local revenue sources, with Proposition 13 resulting in a major shift from local property taxation to state income taxation.

These explanations suggest that the celebrated Tiebout (1956) hypothesis, under which local governments provide public services at efficient levels in response to consumers that choose their jurisdiction of residence based on the tax and public services package it provides, was not operative in California prior to the passage of Proposition 13. In marked contrast, **Fischel (1989)** argued that Proposition 13 was instead consistent with the Tiebout hypothesis, as extended by the work of Hamilton (1975, 1976) under which local property taxes are a payment for local public services received, primarily public education and, for non-homogeneous jurisdictions, reflect the preferences of the median voter. Fischel concluded that popular support for Proposition 13 simply reflected a rational response to the California Supreme Court decisions in a series of cases (the *Serrano* decisions) that broke the link between local property taxes paid and public school expenditures, by requiring that school expenditures not be dependent on community wealth. His conclusion is that “voters responded by rejecting the property tax, shifting the school finance burden to the state” (Fischel, 1989, p. 465).

**Preston and Ichniowski (1991)** survey all property tax and spending limits in the United States over the period 1976 to 1986. They find that such limitations in general have affected revenue growth, especially when limits on property tax rates are combined with limits on property assessments, in which case they estimate that the growth rate in per capita property tax revenues is reduced by more than 45 percent. They also find that, depending on their stringency, limits on total property tax revenues can reduce the growth rate in per capita property tax revenues by nearly 27 percent. More specifically, Dye and McGuire (1997) find that property



tax limitations enacted in certain Illinois counties restrained revenue growth and growth in school operating expenditures, but had no measurable effect on school instructional expenditures – results that they argue are consistent with the Leviathan model of revenue-maximizing local government behavior.

In a subsequent *NTJ* forum on Proposition 13 and related property tax limitation measures, **McGuire (1999)** reiterates that such evidence of the effects of limitations on revenues or expenditures is generally consistent with the Leviathan model of excessive local government spending rather than the Tiebout/Hamilton/median voter model of efficient local public service provision. Accordingly, she concludes that the welfare of local residents can be improved with property tax limitations that curtail excessive expenditures and bring taxes and expenditures closer to the levels preferred by voters. In other research, **Dye, McGuire, and McMillen (2005)** show that property tax limitations tend to become more binding over time, **Downes and Figlio (1999)** show that reductions in property tax revenues brought about by tax and expenditure limits result in reductions in student performance, and **Sexton, Sheffrin, and O’Sullivan (1999)** document the horizontal inequities that arise when property is not reassessed until it is sold, as is the case in California since the passage of Proposition 13. **Anderson (2006)** discusses another feature of property tax limitations, as he shows that they provide homeowners with a form of insurance, helping to reduce undesirable variability in property tax payments, especially during times of differential increases in house prices.

Most recently, in an article that reflects the increasing concern with equity issues that characterizes the *NTJ* and the profession, **Sorensen, Kim, and Hwang (2021)** examine the effects of a limitation of property tax revenues in New York state on student performance across districts with different levels of wealth. They estimate that a \$1,000 reduction in expenditures per

pupil results in a learning loss equal to more than 10 percent of the average increase in test scores that occurs between grade levels. Moreover, contrary to some earlier analyses, they find that these learning losses occur primarily in wealthier districts that rely to a greater extent on the limited property tax revenues than less wealthy school districts. They note that one effect of the policy is thus that it may reduce achievement gaps between richer and poorer districts, although they argue that such “leveling down” is an undesirable way to achieve this outcome.

### **III. PROPERTY TAX ADMINISTRATION**

In keeping with its long tradition of examining the effects of taxes in theory and in practice, many *NTJ* articles on the property tax have focused on its administration. Most of these have examined the accuracy – or inaccuracy – of property tax assessments, and I will focus on these studies.

The most cited *NTJ* article on assessment practices is an early contribution by **Oldman and Aaron (1965)**, who examined property assessments in Boston over the period 1960 to 1964. Despite legal requirements for uniform assessment, they found significant differences in assessment-sales price ratios across different types of property, with both commercial property and multi-family dwellings assessed at higher ratios than single-family homes, and central city properties assessed at higher rates than those in the suburbs. They note that differences in assessment-sales ratios across multi-family and single-family homes may reflect a rough application of the “benefit principle” to the extent that population density is greater for the former. They also find the existence of “administrative regressivity” for single-family homes, with higher assessment-sales ratios for lower value homes, which they again suggest may reflect benefit principle concerns if public services received are roughly similar for homes of all values.

Nevertheless, they conclude that administrative bias made the property tax in Boston highly regressive at that time.<sup>5</sup> More recently, similar results were obtained by McMillen and Singh (2020) for Baltimore, Cleveland, Denver and Philadelphia, who found significant assessment regressivity in Baltimore, Cleveland, and Philadelphia, and modest assessment regressivity in Denver, resulting in effective property tax rates that were generally regressive in all four cities.<sup>6</sup>

In a comprehensive analysis, some of the results of which were presented during a keynote address at the 2023 NTA Annual Spring Symposium, Berry (2021) examines assessment-sales ratios for a national sample of over 26 million residential property sales over the period 2007 to 2016. He finds pervasive regressivity – for example, in a national sample<sup>7</sup>, homes in the bottom decile of the sales price distribution have an assessment-sales price ratio that is on average more than twice that for homes in the top decile of the distribution.<sup>8</sup> He also estimates an intrajurisdictional elasticity of the effective property tax rate with respect to home sales price of  $-0.37$ . He shows that this result cannot be explained by measurement errors in sales prices or factors such as assessment limits, differences in property classifications, or the effects

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<sup>5</sup> Subsequent reforms, described by Farmer (2021), have improved the administration of the property tax system in Boston. Indeed, the work of Berry (2021), discussed immediately below, shows that Suffolk County, which includes Boston, is currently among the ten percent least regressive jurisdictions in the United States with respect to the property tax; these data are available at The University of Chicago School of Public Policy, “An Evaluation of Property Tax Regressivity in Suffolk County, Massachusetts,” [https://s3.us-east-2.amazonaws.com/propertytaxdata.uchicago.edu/nationwide\\_reports/web/Suffolk%20County\\_Massachusetts.html](https://s3.us-east-2.amazonaws.com/propertytaxdata.uchicago.edu/nationwide_reports/web/Suffolk%20County_Massachusetts.html). Rakow (2023) obtains even less regressive assessment-sales price ratios for Suffolk County, but “time adjusts” sales prices to equal the house estimated value in the year of the last assessment. Such an approach provides information on the accuracy of the assessment model in the year of assessment, but does not accurately reflect the relationship between the sales price and actual taxes paid based on the assessed value in the year of sale – the appropriate measure for assessing the fairness of a property tax system.

<sup>6</sup> McMillen and Singh found regressive effective tax rates in Philadelphia despite the existence of a \$30,000 homestead exemption, which by itself would result in a progressive system. They also found that the property tax was regressive with respect to annual income in all four cities.

<sup>7</sup> Berry excludes data from California, where the policy of reassessment only upon sale differs significantly from the policy of periodic reassessment utilized in all other states.

<sup>8</sup> Berry also shows that the same pattern of assessment regressivity obtains in each of the four cities – Chicago, New Orleans, Detroit, and New York City – that he analyzes in detail.

of property tax appeals. Instead, Berry attributes assessment-sales regressivity to data and modeling limitations, especially those arising from the fact that assessors do not have access to information about many of the factors that determine home sales prices, as well as imperfections in the models used by assessors to estimate home prices.

The regressivity of property assessment-sales ratios found by Berry and others has implications for racial inequities as well. Berry notes that since minority households have disproportionately lower wealth including housing wealth, they will bear a disproportionate burden of the higher effective property tax rates that are applied to lower-value homes due to regressivity in assessment-sales ratios. In addition, Avenancio-León and Howard (2022b) show that, given average patterns of assessment-sales regressivity, communities with a larger fraction of minority households have higher assessment-sales ratios, further widening racial assessment gaps. Interestingly, **Avenancio-León and Howard (2022a)** show that property tax limitations in the form of caps on property assessment growth can significantly reduce racial inequality in property taxation. The most important effect arises because binding caps on assessment growth limit increases in assessments to the capped amounts, and thus reduce the possibilities for assessment overvaluations, including those associated with errors due to misspecification of property assessment models. Also, conditional on living in a state with a cap, Black and Hispanic homeowners are slightly more likely to be subject to a binding assessment cap, which also acts to reduce their assessment-sales ratios.

In a related study, **Doerner and Ihlanfeldt (2015)**, following up on an earlier analysis by **Ross (1971)**, show that the property tax appeals process exacerbates the regressivity of the

property tax due to assessment-sales ratios that decline with home sales price.<sup>9</sup> Using a sample of appeals from Miami-Dade County in Florida, they show that homeowners in higher-value communities are significantly more likely to appeal than those in lower-value communities, primarily because almost all appeals involve property tax appeal services, and such services generally target more affluent communities where their potential fees (typically a percentage of the first-year tax savings obtained from the appeal) will be larger. They estimate that the expected reduction in assessed value in higher-value communities is as much as 23 percent higher than in lower-value communities. Such increases in regressivity due to the property tax appeals process would be expected to increase the racial inequities due to property tax administration. Indeed, Avenancio-León and Howard (2022b) show that minority homeowners are less likely to appeal their property assessments, less likely to win their appeals, and generally receive a smaller reduction in their assessments than non-minority homeowners.

Numerous researchers have applied the tenets of behavioral economics to critical issues in public economics.<sup>10</sup> In particular, two recent papers in the *NTJ* introduce behavioral economics into the analysis of property tax administration. Using data from Philadelphia, **Chirico et al. (2019)** show that behavioral “nudges” in the form of notifications of property tax delinquencies increase compliance, especially when the nudges take the form of a threat of sanctions (fines, penalties, or a property lien with the possibility of a forced sale) in the event of continued non-compliance. In the latter case, the authors estimate that the letters with threatened sanctions, which cost approximately one dollar to send, were quite cost-effective, returning approximately \$65 per letter sent. **Moulton et al. (2022)** examined elderly homeowners with a

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<sup>9</sup> Berry (2021) confirms this result with more recent and more comprehensive data.

<sup>10</sup> For example, see Bernheim and Taubinsky (2018), Alm and Sheffrin (2017), and **Alm (2010)**.

reverse mortgage who make no regular monthly mortgage payments but are required to pay their property taxes for their reverse mortgage to remain in good standing and to avoid a potential foreclosure on their home. The authors showed that nudges in the form of a series of five quarterly reminders about their property tax obligations and the potentially dire consequences of non-payment reduced the default rate for the sample of elderly homeowners with a reverse mortgage by about 30 percent.<sup>11</sup>

Finally, in a paper that is hot off the presses, **Kim, Hou, and Yinger (2023)**, building on the work of **Wicks and Killworth (1967)** and **Sjoquist and Walker (1999)**, examined a New York State program that encourages smaller towns and cities to merge their property assessment offices or enter into cooperative assessment agreements while maintaining fully separate taxing authority. They find significant economies of scale from such mergers or cooperative agreements, as local governments can economize on a variety of costs associated with the assessment process. In particular, they estimate a reduction in assessment costs of 46 percent when two jurisdictions with 10,000 parcels to assess merge their assessment offices. However, the authors also note that only 20 percent of eligible jurisdictions elected to participate in the program, suggesting that resistance to merging assessment offices and losing some measure of autonomy – despite the prospect of significant cost reductions – may be significant.

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<sup>11</sup> See also Nguyen-Hoang and Yinger (2021) who examine how the effects of a school property tax relief program in New York state depended on two other factors stressed in the behavioral economics literature – the program’s salience (the level of publicity surrounding the program) and its framing (whether the tax relief appeared in the form of an exemption on the homeowner’s property tax statement or as a rebate that was mailed to the homeowner).

#### IV. THE INCIDENCE OF THE PROPERTY TAX

As noted in Section I, the incidence of the property tax is one of the more contentious issues in public economics. Three alternative views, discussed in two *NTJ* forums on the tax (**Fischel, 2001; Zodrow, 2001; and Oates and Fischel, 2016**) have appeared in the literature<sup>12</sup>: (1) the “traditional view” which argues that the property tax is fully shifted forward to consumers in the form of higher housing prices, (2) the “benefit view” which concludes that the property tax, coupled with the appropriate zoning ordinances and/or capitalization effects, is an efficient benefit tax that reflects payment for local public services received, and (3) the “capital tax” view (initially referred to as the “new view”) which argues that the property tax is a distortionary tax on the use of capital within local jurisdictions. In this section, I discuss the development of these alternative views as well as some directions/clarifications that would help advance the debate.

##### A. The Three Views

The traditional view of the incidence of the property tax is laid out by **Netzer (1973)**,<sup>13</sup> who took a partial equilibrium approach to analyzing the tax, including examining the effects of increasing the property tax in a local housing market. Under this scenario, the taxing jurisdiction is modeled as a small open economy facing a fixed rate of return to capital, which thus by construction bears none of the tax. Instead, the burden of the tax is borne by local factors and/or consumers, and the traditional view holds that the entire burden of the residential property tax is

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<sup>12</sup> See also Hamilton (1983), Wildasin (1986), Mieszkowski and Zodrow (1989), Nechyba (2001), Oates (2001) and Youngman (2016).

<sup>13</sup> See also Simon (1943) and Netzer (1966).

borne by local housing consumers in the form of higher housing prices.<sup>14</sup> The traditional view thus implies that the property tax inefficiently reduces the size of the local housing stock and that its burden is borne in proportion to housing consumption (and is thus somewhat regressive, or roughly proportional with respect to lifetime income).

The capital tax view of the property tax, developed initially by Mieszkowski (1972) and extended by Zodrow and Mieszkowski (1983, 1986b), stresses that the partial equilibrium analysis underlying the traditional view is misleading as it ignores the facts that the property tax is used by virtually all local jurisdictions and is applied to a large fraction of the capital stock (including most non-residential capital). Mieszkowski (1972) instead adapted the Harberger (1962) general equilibrium model of tax incidence to the analysis of the property tax, modeling the economy as having a fixed national capital stock and two types of local jurisdictions — those characterized by relatively “high” tax rates and those characterized by relatively “low” tax rates. He showed that property tax rates that exceed the national average drive capital out of the high-tax jurisdictions into the relatively low-tax jurisdiction, and thus result in an inefficient misallocation of capital across jurisdictions.<sup>15</sup> The incidence of the tax is captured by two effects. The first is the “profits tax effect,” which reflects the average burden of all of the property taxes imposed across the nation and is borne by the owners of the fixed national capital stock. It is thus a relatively progressive element of the national tax structure. The second are the

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<sup>14</sup> Similarly, the traditional view holds that the burden of the nonresidential property tax is borne by the consumers of business goods and services.

<sup>15</sup> In addition, local concerns about the extent to which use of the property tax may drive capital out of a jurisdiction creates a tendency for local governments to choose an inefficiently low level of public services, a point developed by Zodrow and Mieszkowski (1986a) and Wilson (1986). The associated tax competition literature is reviewed by **Wilson (1999)**, which is the most highly cited paper published in the *NTJ*; see also Zodrow (2003) for a discussion of tax competition in the context of the European Union, and **Zodrow (2010)** and Keen and Konrad (2013) for more recent discussions of the tax competition literature.



“excise tax effects,” which reflect property tax differentials about the national average and result in housing and commodity price increases (decreases) and wage and land price decreases (increases) in the relatively high (low) tax jurisdictions. Because these roughly symmetric excise tax effects tend to cancel, from a national perspective their distributional effects are secondary and the profits tax effect is the primary factor determining the distributional effects of the tax. In addition, Zodrow and Mieszkowski (1983) show that the traditional view can be viewed as a special case of the capital tax view by examining the incidence of the property tax from the perspective of a single jurisdiction.<sup>16</sup>

Several articles have estimated the magnitudes of these effects and their efficiency costs and distributional effects under the capital tax view. For example, in an article that appeared in the 2007 *NTA Proceedings*, Gravelle (2007) estimates that the average property tax rate in the United States falls between 1.49 percent and 1.65 percent and the tax rates attributable to the excise tax effects are between 29 percent and 39 percent of the average rates. Jorgenson and Yun (1996) simulate a dynamic general equilibrium model of the U.S. economy and estimate that the average efficiency cost of the national system of property taxes is 16.7 percent of revenues and the marginal efficiency cost is 18.6 percent of revenues. Muthitacharoen and Zodrow (2010) construct a model of the use of the property tax from the perspective of a single taxing jurisdiction facing a perfectly elastic supply of capital. In their benchmark case, the average efficiency costs of the local property tax range from 5.8 to 15.9 percent of property tax revenues, while the marginal efficiency costs range from 8.2 to 43.7 percent of revenues.

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<sup>16</sup> See also McLure (1977).

**Plummer (2003)** analyzes the distributional effects of the residential property tax on owner-occupied homes under the assumptions that (1) homeowners are the owners of capital for purposes of her analysis and bear the burden of the tax, and (2) residential property ownership proxies for capital ownership in general. Under these assumptions, she notes that her results can be interpreted as identifying the incidence of the residential property tax under the capital tax view. Using data from Dallas County, Texas, she finds that, after allowing for the deductibility of property taxes against federal income taxes, the incidence of the residential property tax for owner-occupied housing is roughly proportional with respect to lifetime income (using annual consumption as a proxy for lifetime income and residential property value as a proxy for annual consumption).<sup>17</sup>

The benefit tax view is an extension of the Tiebout (1956) model discussed above, under which consumer mobility and interjurisdictional competition for residents, coupled with numerous other assumptions, result in efficiency of resource allocation in the local public sector. Although Tiebout ignored local property taxation and instead assumed the existence of benefit taxes in the form of head taxes, Hamilton (1975, 1976) extended the model to account for property tax finance. Specifically, Hamilton (1975) constructed a model characterized by communities that were homogenous in their tastes for both public services and housing, numerous enough to accommodate all possible sets of tastes, and utilized zoning that established the minimum house size in each community; these assumptions were sufficient to convert the property tax into the benefit tax originally envisioned by Tiebout. Hamilton (1976) extended the

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<sup>17</sup> Another important issue is the effects of replacing a general property tax with a land value tax or a property tax that is assessed at higher rates on land than on structures. For analyses of the distributional effects of such reforms, see **England and Zhao (2005)**, **Bowman and Bell (2008)**, and **Plummer (2010)**, while **Brueckner (1986)** provides a theoretical analysis. **Oates and Schwab (1997)** analyze the effects of a property tax system in Pittsburgh that taxed land at a rate more than five times the rate applied to structures.

analysis to the case of both homogeneous and nonhomogeneous communities, in which case “perfect capitalization” of fiscal differentials (the present values of all differences between property taxes paid and benefits of local public services received) again converts the property tax to a benefit tax.<sup>18</sup> Hamilton’s work was extended by Fischel (1985, 1995, 2001a, 2015), who argues that zoning ordinances, defined comprehensively to include a wide variety of land use regulations, coupled with exactions negotiated between developers of larger projects and local governments, are sufficiently restrictive to convert the property tax into a benefit tax in the manner envisioned by Hamilton (1975).<sup>19</sup>

Oates and Fischel (2016), drawing on Fischel (1975) as well as empirical work by Fox (1978), Erickson and Wasylenko (1980), McHone (1986), and Evenson, Wheaton, Gyourko, and Quigley (2003), also conclude that the benefit tax view applies for non-residential property. Specifically, they argue that competition among communities wishing to attract firms while ensuring that they “pay” for any associated negative externalities results in negotiations between local governments and businesses such that property taxes paid, coupled with appropriately designed exactions or tax incentives, are sufficient to convert the property tax to a benefit tax.

The implications of the benefit view are striking. First, the property tax is effectively a user charge that is paid in exchange for the benefits of local public service and is thus a non-

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<sup>18</sup> Specifically, relatively expensive homes sell at a discount equal to their “fiscal differentials” or the present values of all future taxes in excess of benefits received, while relatively inexpensive homes sell at a premium reflecting their fiscal differentials or the present values of all future benefits in excess of future taxes. Perfect capitalization occurs in the Hamilton (1976) model because he assumes that alternative communities that are homogeneous with respect to both demands for public services and housing are always available; thus, for example, no households with high-value homes are willing to pay any property taxes in excess of benefits received since they can always move to homogeneous high value communities.

<sup>19</sup> Note that the use of exactions may result in benefit taxation in the aggregate, but may be passed on to homeowners in ways that are roughly proportional to property value. In this case, exactions are analogous to property taxes that result in differential tax burdens across homeowners who receive the same level of public services – as occurs under the capital tax view for a property-tax-financed increase in public services by a single taxing jurisdiction where property taxes equal benefits received in the aggregate (Zodrow, 2001a, 2001b).

distortionary tax, both for homeowner and businesses. Second, as a benefit tax, the property tax has no effects on the distribution of income.

## **B. Additional Research**

The most cited *NTJ* article on the incidence of the property tax is **Carroll and Yinger (1994)**, who tested the benefit view by examining the effects on the prices of rental housing of property-tax-financed increases in local public services in the Boston area. Under the benefit tax view, an increase in public services financed by an increase in property taxes should appear as higher rents, as renters would bear the burden of the tax utilized to finance an increase in the public services from which they benefit. The Carroll and Yinger analysis builds on an earlier series of papers on this topic that appeared in the *NTJ*, including **Orr (1968, 1970, 1972)**, **Heinberg and Oates (1970, 1972)**, and **Hyman and Pasour (1973)**, which had mixed results, finding either no forward shifting of the property tax to renters or partial forward shifting to rents that ranged from 46 to 60 percent of the amount of the tax.<sup>20</sup> Carroll and Yinger improve on these studies by using a more comprehensive set of housing attributes, a more sophisticated measure of public service quality, and a broader set of public services in their analysis. They estimate that for their sample of 147 towns and cities in the Boston area a \$1 increase in local property taxes on average increases rents by only \$0.09 to \$0.16; they conclude that, for their sample, “the property tax on rental housing is far short of being a benefit tax” (Carroll and Yinger, 1994, p. 311).<sup>21</sup> Indeed, the results of this study are one of the reasons that Ross and

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<sup>20</sup> In contrast, Dusansky, Ingber, and Karatjas (1981) found more forward shifting of the tax, ranging between 62 and 110 percent.

<sup>21</sup> See **England (2016)** for a comprehensive discussion of papers addressing the extent to which property taxes on rental property are shifted forward to renters. In a related paper that constructs a four-sector (housing,

Yinger (1999, p. 2043), in their comprehensive review of the literature on urban public finance, conclude that the “evidence against the benefits view is overwhelming.”

In addition to Zodrow and Mieszkowski (1986a), several papers have constructed “hybrid” models that contain elements of both the capital tax view and the benefit tax view. In particular, building on the work of Hoyt (1991), Krellove (1993), and Wilson (1997), as well as earlier papers by Sonstelie and Portney (1978) and Brueckner (1981), Wilson (2003) constructs a Tiebout-type model in which perfect household mobility across jurisdictions is modeled explicitly, public service levels are endogenous, local governments set tax policy to maximize local land values, and there is no zoning. In the context of this model, Wilson shows that the property tax can be viewed as a congestion fee imposed on new residents, so that the property tax is a benefit tax in the sense that all residents in the aggregate pay taxes equal to the marginal costs of (the inefficient level of) public services provided; if all residents are identical, then this aspect of the benefit view obtains at the household level as property taxes paid equal the marginal costs of public services provided for all households.<sup>22</sup> However, Wilson also shows that, relative to an efficient head tax, the property tax distorts housing consumption decisions and results in the underprovision of public services – results that are associated with the capital tax view.

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manufacturing, and services subject to the property tax, and untaxed agriculture) simulation model of the property tax in a small open economy model with three factors of production (capital, labor, and land) in each sector, Muthitacharoen and Zodrow (2012) find that in the intermediate run (with labor mobile across production sectors but not across taxing jurisdictions), nearly 65 percent of the excise tax effects of the property tax are borne by labor and land, that is, there is relatively little forward shifting. If labor is mobile across jurisdictions, the extent of forward shifting to the two non-tradable goods in the model (housing and services) increases to 75 percent. The model does not, however, distinguish between rental and owner-occupied housing.

<sup>22</sup> As discussed by Zodrow (2001b), in many models the local government budget constraint, combined with the assumption that local public services are publicly-provided private goods, implies that the benefit view holds in the aggregate, as property taxes paid equal the costs of services provided; moreover, if all households are identical with respect to housing consumption, then this aspect of benefit taxation holds for all households.

Finally, following in the Tiebout (1956) tradition, most models of the incidence of the property tax assume that all households in a local jurisdiction are homogeneous with respect to their demands for public services (and in the case of Hamilton (1975) and related work, homogeneous with respect to housing consumption). However, the work of **Gallagher (2019)**, which builds on **Kurban, Gallagher, and Persky (2012)** and is discussed further below, stresses that communities are typically not homogeneous with respect to either housing consumption or demand for public services, especially public education. Moreover, demands for housing and for education (and perhaps other public services) are likely to be correlated, with households with larger homes – and higher incomes – likely to have more children and thus greater demand for public education (unless they instead utilize private schools). Indeed, Gallagher (2019, p. 12) argues that empirical evidence indicates that “smaller dwellings, although valued less than larger counterparts, typically house disproportionately fewer school-age children than larger homes.” In this case, higher property taxes on higher value homes could be more consistent with the benefit view than in the case of homogeneous demands for public services – without any of the capitalization effects stressed by Hamilton (1976) – as the higher taxes paid by households with higher value homes would simply reflect the greater value of public services received. The incorporation of a positive relationship between home size and demands for public services into models of the incidence of the property tax is a very useful direction for future research.

### C. Oates and Fischel on the Incidence Debate

The most provocative recent article on the debate regarding the incidence of the property tax is the *NTJ* forum contribution by Oates and Fischel (2016) that was cited in Section I.<sup>23</sup> Oates and Fischel discuss the three views and note that in general it is difficult to distinguish empirically between the capital tax and benefit tax views.<sup>24</sup> In particular, a large literature, beginning with the work of Oates (1969) and extending through (among many others) Yinger, Bloom, Borsch-Supan and Ladd (1988), Palmon and Smith (1998), and Gallagher, Kurban, and Persky (2013),<sup>25</sup> has generally found evidence of at least partial and in some cases full capitalization of fiscal differentials. However, both interjurisdictional and intrajurisdictional capitalization are consistent with both views (Zodrow, 2001b, 2014) and thus offer little help in distinguishing between them.<sup>26</sup>

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<sup>23</sup> Oates and Fischel focus on the residential property tax, as will the discussion in this paper. However, they argue that property taxes on businesses – which account for roughly 55 percent of total state and local property taxes (Ernst and Young, State Tax Research Institute, and Council of State Taxation (2022) – are also benefit taxes (including compensation to communities for any negative externalities associated with the firms), reflecting negotiations between local governments and businesses. Although such negotiations may occur for the location of new establishments, they often result in property tax incentives to mobile firms, suggesting that existing firms are overtaxed. Indeed, Testa and Mattoon (2007) estimate that total taxes paid by businesses far exceed benefits received, with a median taxes-to-benefits of 3.6 (their minimum estimate is 2.1). Oates and Fischel (2016, p. 422) concede that businesses generally pay more in taxes than they receive in government services, but argue that the “benefit” firms receive include “permission to locate in the community.” This expansive definition of benefits implies that the property tax, and indeed any taxes business pay, must be benefit taxes – but is more consistent with rent extraction or Ramsey pricing for largely immobile existing firms than with the concept of benefit taxation reflecting equality between taxes paid and the value of public services received.

<sup>24</sup> See also Nechyba (2001) and Zodrow (2001b).

<sup>25</sup> See Sirmans, Gatzlaff, and Macpherson (2008) and Dowding, John and Biggs (1994) for surveys. Articles on property tax capitalization that have appeared in the *NTJ* include **Wicks, Little, and Beck (1968)**, **Smith (1970)**, **Church (1974)**, **Hamilton (1979)**, **McEachern (1981)**, and **Do and Sirmans (1994)**.

<sup>26</sup> Groves (2011) notes that the capital tax view implies that higher than average property tax rates should result in lower than average capital investment. He uses house-level data from three counties in the St. Louis metropolitan statistical area, and models residential capital investment as total square footage of living space (rather than the more imprecise measures of number of homes or number of housing permits used in some earlier studies). Groves (2011, p. 22) estimates a tax rate elasticity of residential capital investment between  $-0.20$  and  $-0.25$ , which he argues

Oates and Fischel argue that a related study by Lutz (2015) provides compelling evidence that distinguishes between the two views based on local conditions, especially the elasticity of supply of local housing. Lutz examines the effects of a 1999 school finance reform in New Hampshire under which large state grants, on average equal to 15 percent of property tax revenues prior to the reform, were issued to municipalities and were used primarily to finance reductions in property taxes.<sup>27</sup> Examining data from 1992 to 2003, he finds that in New Hampshire municipalities located 50 miles or more from Boston, the nearest major city, housing investment in the form of new home permits increased by between 11 and 22 percent, implying an elasticity of approximately -1, which he argues is consistent with the capital tax view.<sup>28</sup> <sup>29</sup> By comparison, in the suburban ring within 50 miles of Boston, he finds no increase in investment and instead roughly full capitalization (estimated as between 70 and 90 percent) of the property tax reduction into higher housing prices, which he argues is consistent with the benefit view.

Lutz attributes the difference in responses to the property tax reduction to differences in housing supply elasticities, which are significant outside the 50-mile suburban ring surrounding Boston but essentially zero inside it, primarily because of the relative prevalence of land use regulations, including growth management rules that allow municipalities to set a binding limit

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provides evidence supporting “the New View theory of tax incidence and that residential capital decisions are responsive to [property] tax differentials.” This work builds on an earlier analysis of the effects of property tax differentials across a sample of 62 cities by **Wassmer (1993, p. 151)**, which he concluded provided “evidence that local property taxes affect local property values in the manner predicted by the ‘New View’ and are not possible under a pure Benefit View of property taxation”, although the estimated tax effects were much smaller in magnitude than those obtained by Groves.

<sup>27</sup> Lutz notes that estimates suggest that 80 to 100 percent of the grants were used to finance property tax reductions.

<sup>28</sup> Lutz notes that New Hampshire is not primarily a rural state, with 60 percent of its population living in urbanized areas; 27 percent of the population lives in the suburban ring surrounding Boston.

<sup>29</sup> Note that one response that Lutz does not consider is changes in purchasing patterns for existing homes, which under the capital tax would be reflected as purchases of somewhat higher value homes, given the reform-induced reduction in the user cost of capital for owner-occupied homes.



on the number of new homes constructed annually. Moreover, he observes that the communities that experienced an increase in building activity increased the stringency of their land use policies, a change that would be consistent with moving toward the less elastic supply of housing that characterizes the suburban communities where the benefit tax view is operative.

Lutz (2015, p. 327-328) suggests that his results “point toward a synthesis of the two views, with the benefit view most applicable in urban and dense suburban settings and the capital tax view more relevant in less dense suburban and rural locations.” Oates and Fischel (2016, p. 415) concur in this assessment, describing it as “evidence that the capital-tax view applies in relatively undeveloped areas, while the benefit view is more relevant in developed urban areas,” and more specifically (p. 426) conclude that, “If the Lutz results may be projected to the rest of the nation, this indicates that the vast majority (70-80 percent) of the U.S. population would be candidates for the benefit view of property taxes.”

#### **D. Issues Raised/Revisited by the Oates and Fischel Analysis**

The Oates and Fischel analysis and their ultimate conclusion that the benefit view applies for 70-80 percent of the U.S. population raises – or causes one to revisit – a number of key questions regarding the incidence of the property tax. I consider five such questions in what follows.

##### *1. What is the Incidence of the Property Tax in Central Cities?*

The Oates and Fischel 70-80 percent figure for the percentage of the population for which the benefit tax applies includes the residents of central cities. This is somewhat surprising and contrary to the conventional wisdom in state and local public finance, as the Tiebout model underlying the benefit tax view assumes households sort into different jurisdictions that are homogeneous with respect to demands for public services, even in the case analyzed by

Hamilton (1976) in which households are heterogeneous with respect to housing demands. In contrast, the residents of central cities are extremely diverse and have widely varying demands for public services (and varying incomes and housing consumption), so that demands for public services for many residents will not correspond to taxes paid, even with perfect capitalization of the type envisioned by Hamilton or found in the New Hampshire suburbs of Boston by Lutz (2015). Indeed, in a discussion of the Tiebout (1959) model underlying the benefit view, **Fischel (1981, p. 99)** observes that “nearly every student of local public finance has decided that suburbs are the only likely candidates for the operation of the Tiebout model. Central cities are usually excluded except as a benchmark for considering the efficiency advantages (or disadvantages) of the model.” Similarly, Ladd (1998, p. 34-35), drawing in part on the work of Fischel, emphasizes that, “The benefit view of the property tax is best suited to ... suburban areas ... And even Fischel would agree that it does not apply to large and heterogeneous cities ... [where] the property tax is not appropriately viewed as a benefit tax,” while **Plummer (2003, p. 742)** argues that the assumptions of the benefit view “are likely to be satisfied only in suburban areas, if at all.” Indeed, Fischel (2015, pp. 156-157) notes that central cities differ in significant ways from suburbs, including a larger fraction of renters, and relatively more important and pervasive business interests. Recall that Carroll and Yinger (1994) find that renters bear relatively little of the burden of the property tax, a result that is inconsistent with the benefit tax view. In addition, the relative importance of businesses adds another element of heterogeneity to demands for public services, beyond that already attributable to the highly diverse populations that characterizes central cities, as well as business demands for zoning and land use regulations that may differ from those of city homeowners and are likely to be more politically influential. Although zoning may indeed be used in central cities to preclude development that would “free

ride” on existing public services as stressed by Fischel (2015), it cannot eliminate the heterogeneity of tastes for public services that characterizes central city residents – who account for roughly 27 percent of the population – and thus significantly limits the applicability of the benefit view in central cities, consistent with the longstanding consensus on this issue.

## *2. What are the Implications of Property-Tax-Financed Education Expenditures?*

In the classic model of local service provision constructed by Tiebout and extended to include property tax finance by Hamilton, households are segregated into communities according to their demands for public services, which typically means they are also segregated by income and house value. Although such an outcome is desirable on efficiency grounds, the resulting differentials in the provision of public services, especially K-12 public education, have been widely perceived as highly inequitable. Indeed, as discussed above, concerns about these inequities have resulted in litigation, legislative action, or a combination of both that have led to school finance reforms in most states, with the most prominent early reforms being those enacted in 1971 in California in response to the state Supreme Court decision in the case of *Serrano v. Priest*. Such school finance reforms often partially or fully break the link between local property taxes and local per-pupil educational expenditures. Fischel and Oates (2016, p. 424) discuss the “extreme (but not unique)” case of California, where the school finance formula implies there is essentially no link at the margin between local property tax revenues and local education expenditures, in which case the benefit tax view cannot apply and the property tax is “converted to a true real-estate capital tax.” They conclude that the California school education finance formula implies that for the roughly 12 percent of the U.S. population that lives in the state, “the ‘capital tax’ view obtains.”

Similar education finance reforms have occurred in many states, either due to state court decisions or to legislative action (often in response to court decisions or to avoid litigation), in many cases reducing or breaking entirely the link at the margin between increases in local property tax revenues and education spending.<sup>30 31</sup> Although the equalization formulas that have been implemented across many states differ in their details, they have largely been successful in reducing intrastate educational expenditure differentials. Indeed, Rueben and Murray (2008) estimate that roughly two-thirds of the inequality in per-pupil education expenditures is due to variation in expenditures across states, with only one-third attributable to the remaining intrastate differentials. This suggests that education finance reforms across the country may in large part have succeeded in breaking the link between local property tax revenues and local expenditures on education in which case such reforms would have significantly reduced the extent to which the property tax can be viewed as a benefit tax, especially given the large fraction of local property tax revenues (roughly one-half) used to finance educational expenditures.

### *3. What Are the Implications of New Construction?*

Oates and Fischel (2016) concede that the capital tax view is likely to obtain for individual decisions regarding home expansions, for example, the case of a homeowner who decides against (or reduces the scope of) the expansion or improvement of an existing home due to the resulting increase in property tax liability; Ladd (1998, p. 34) describes such an expansion as “beyond the purview of the zoning authority but not the tax assessor.”

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<sup>30</sup> Jackson, Johnson, and Persico (2014, 2016) provide comprehensive discussions of school finance reforms through 2010. Data presented in Jackson, Johnson, and Persico (2014, p. 48, pp. 76-83) indicate that as of 2010 school finance reforms have been enacted in 48 states, including spending limits (under which districts at the limit cannot increase spending regardless of additional property taxes raised) in 13 states, and equalization programs (under which some property tax revenues raised may be taken away and redistributed by the state) in 30 states.

<sup>31</sup> Note, however, that the overall extent to which local property tax revenues have been used to finance K-12 education in the nation has been quite stable over time (Kenyon and Munteanu, 2022).

The logic of this argument, however, applies more broadly than suggested by the example of, say, a foregone room addition. Data from the National Association of Home Builders indicate that in 2020, 25 percent of new single-family homes in the United States (and presumably a larger fraction in central cities and their immediate suburbs) were either “teardowns,” where an existing property is demolished and replaced, or “infills,” which are new homes built on a lot that exists in a neighborhood that is largely developed.<sup>32</sup> Such homes are not likely to be significantly constrained by any zoning regulations, especially if the newly constructed homes are, as might be expected due to income growth over time, of higher value than the average home in the existing neighborhood. Under this scenario, future property taxes would increase the cost of capital of home construction and, as in the case of the home extension, should reduce the size or other features of the new home as predicted under the capital tax view.

#### *4. What Are the Implications of Perfect Capitalization?*

Assuming that perfect capitalization of fiscal differentials occurs, what are its implications for the benefit tax view? Suppose that, following Hamilton (1976), a community is characterized by homogeneous demands for public services but heterogeneous housing and property taxes are increased to finance an expansion of public services that would be desired by all residents if the expansion were financed with benefit taxes. In this case, the property tax is clearly not a benefit tax at the time of the tax increase. Instead, high value homes will experience a decline in value equal to the present value of all future fiscal differentials – the excess of all future property taxes paid over the benefits of all future services received – with offsetting increases in the values of low value homes.

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<sup>32</sup> National Association of Home Builders, “25% of New Single-Family Homes Are Infills or Teardowns,” <https://www.nahb.org/blog/2021/12/25-percent-of-new-single-family-homes-are-infills-or-teardowns>.

Such large capitalization effects can affect community decision making in at least two ways. First, the owners of high value homes are likely to oppose such expansions of public services given the capital loss they will suffer if the policy is enacted, with the opposite effect for the owners of lower value homes. For both types of households, distortions of public sector decision-making will arise that would not occur if the property tax were a true benefit tax.

Second, and more generally, given a current tax and expenditure mix, households who are purchasing existing homes or building new houses will anticipate that any future increases in public services financed with the property tax will result in significant capital gains or losses (since the present value of all future fiscal differential are capitalized into housing prices), which will distort their housing consumption decisions. Indeed, these distortions will correspond to those predicted by the excise tax effects of the capital tax view, with underconsumption of high value homes and overconsumption of low value homes. Thus, even under the stringent conditions that give rise to perfect capitalization of fiscal differentials in the Hamilton (1976) model, the property tax becomes a benefit tax only for (1) future home purchasers – that is, it is a benefit tax only after all of the various intrajurisdictional capitalization effects, which clearly and significantly do not correspond to benefits received, are borne by the owners of high-value and low-value homes existing at the time of enactment of the tax change, and (2) in the absence of any anticipated future changes in property tax burdens.

##### *5. Do Stringent Zoning and Other Land Use Regulations Result in a Benefit Tax?*

Much of the debate regarding the property tax has centered on the extent to which zoning, defined broadly to include the wide panoply of land use regulations enumerated by Fischel (1985, 1995, 2015), is sufficiently binding to preclude the long run changes in housing consumption predicted under the capital tax view. Gyourko, Saiz, and Summers (2008) show that

the extent of zoning and other land use regulations differs considerably across states and municipalities. They examine all the major housing markets in the United States and use national survey data to construct an index of the stringency of the land use regulatory environment in each local jurisdiction, which they call the Wharton Residential Land Use Regulation Index (WRLURI); this index aggregates 11 subindexes that summarize information on various aspects of the land use regulatory environment in each jurisdiction analyzed. They find that the stringency of land use regulations varies widely across geographic areas, which suggests that the likelihood that zoning restrictions are binding varies greatly as well.

In particular, Gyourko, Saiz, and Summers find that communities in the Northeast and in the West, especially in California, are the most highly regulated, while communities in the South and Midwest are the most lightly regulated. In addition, communities that are highly regulated in one dimension (e.g., a required minimum lot size of at least one acre) tend to be highly regulated in all of the 11 dimensions that make up their index (e.g., open space requirements, formal exactions policies, and complex and protracted approval processes for new projects). In addition, they stress that their index is only weakly (and negatively) correlated with population density, but strongly positively correlated with wealth, which they interpret as indicating that exclusionary motives are likely to be dominant in setting stringent regulatory policies rather than shortages of land. More generally, Kahlenberg (2023) emphasizes that although in past years much zoning was designed to create or maintain racial segregation, the primary target of current-day exclusionary zoning is low income and working class households; he notes that since enactment of the 1968 Fair Housing Act, racial segregation has declined by roughly 30 percent, while income segregation has doubled.

The benefit tax logic developed by Oates and Fischel suggests that the property tax is very likely to be a benefit tax in communities with high WRLURI values and thus stringent land use regulations, as residents design zoning policies to ensure that newcomers pay their “fair share” of the costs of providing local public services. But Glaeser and Gyourko (2018, p. 27) offer an alternative interpretation.<sup>33</sup> They show that housing prices far exceed construction costs in areas with stringent land use regulations, and argue that the empirical evidence indicates that any negative externalities associated with building stressed under the benefit view rationale for zoning are “not nearly large enough to justify the costs of regulation.” Instead, the level of land use regulation in the highly regulated communities is more likely to reflect the rationales first identified by White (1975) and stressed by Barseghyan and Coate (2016) of “scarcity zoning,” where existing residents drive up the prices of their homes by restricting supply, and “fiscal squeeze zoning,” where existing residents attempt to extract rents from newcomers and thus reduce their own property tax liabilities below those associated with benefit taxation. Note that it is possible that the property tax could still be a benefit tax in the presence of scarcity zoning. Specifically, if all houses, including those built under the current zoning regulations, are identical then their associated property tax liabilities would also be identical. In this case, the Hamilton (1975) benefit tax result with homogeneous communities would obtain even though stringent zoning regulations would drive up home prices (an outcome that is broadly similar to the long run result in the model constructed by Barseghyan and Coate (2016) discussed further below). However, homogeneous communities are rare and, as described by Fischel (2015), the more likely situation is that communities evolve with new homes being more expensive, subject to more

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<sup>33</sup> Similarly, Ross and Yinger (2000) stress that fiscal zoning is consistent with numerous models of household sorting into local communities other than those underlying the benefit tax view.



stringent zoning regulations, and paying more property taxes than existing homes – that is, fiscal squeeze zoning results in an equilibrium with heterogeneous housing where property taxes are not likely to be benefit taxes.

Glaeser and Gyourko emphasize that the opportunities for such scarcity or fiscal squeeze zoning exist in the areas characterized by especially high WRLURI values, as they are typically very high-wage, high-productivity areas that are thus highly desirable locations with excellent employment opportunities – and land use restrictions that are far more stringent than those required under the benefit view. Indeed, Glaeser and Gyourko (2018, p. 23) stress that such restrictions on housing supply create a “potentially profound distortion” as people are constrained from moving to high productivity areas. They note that Hsieh and Moretti (2019) have estimated that the resulting misallocation of labor is sufficiently great that reducing the land use restrictions to average levels in just three such areas – New York, San Francisco, and San Jose – would raise national GDP by nearly 9 percent. Although Glaeser and Gyourko are skeptical of the magnitude of this particular result, they estimate that the reallocation of labor that would result from reducing the stringency of land use regulations would yield a roughly 2 percent increase in national GDP. More generally, Glaeser (2017, p. 4-5) suggests that land use controls are “America’s most important, and potentially costly, regulations” and that the benefit tax view that such regulations are designed to simply offset the negative externalities of new construction is “untenable” – a conclusion that is completely at odds with the idea that zoning merely converts the property tax to an efficient pure benefit tax.

This line of research also has important implications for the work of Lutz (2015) discussed above. In particular, it suggests that the property tax reduction in New Hampshire he analyzes, which resulted in no increase in housing permits in the central city and suburban communities in

his sample, is more likely to reflect excessive land use restrictions than the degree of zoning and other land use regulations associated with benefit taxation. Indeed, Gyourko, Saiz, and Summers (2008) find that in the continental United States, (1) only three states have WRLURI values that are roughly 1.5 standard deviations above the national average – Massachusetts, New Hampshire, and Rhode Island, and (2) only two metropolitan areas have WRLURI values that similarly are at least 1.5 standard deviations above the national average for municipalities – Boston and Providence.

In addition, Glaeser and Ward (2009) specifically analyze land use regulations in Boston. They note that three of the four metropolitan subdivisions in the United States with the greatest house price appreciation between 1980 and 2004 were in the Boston area, while the number of housing permits fell by more than 50 percent between the 1960s and the 1990s. They document a dramatic increase in a wide variety of regulations since the 1980s.<sup>34</sup> They find that the decline in housing permits and the increase in housing prices cannot be explained by a lack of available land and are instead explained by an increase in land use regulations, especially minimum lot sizes. Finally, they find that in the greater Boston area current density levels are far too low to be maximizing land values, and that the impact of increased density at the neighborhood level is far too small to justify the current level of land use regulation – that is, the current level of land use regulation is much too great to reflect only policies consistent with converting the property tax to a benefit tax.

These results suggest that the municipalities in Lutz’s sample are among the most likely in the nation to be characterized by zoning and other land use restrictions that are far more stringent

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<sup>34</sup> Glaeser and Ward (2009, p. 266) also note that the regulations are “astonishingly vague, which increases the likelihood that there will be disputes about implementation.”

than those required for the benefit view to hold. In particular, these factors also strongly suggest that extrapolating from the New Hampshire experience to the rest of the country to obtain an estimate of the extent to which the benefit view applies nationwide is quite problematical – both because the benefit view is not likely to apply in the Boston area and because the level of land use regulation in Boston area municipalities is not representative of policies in most of the rest of the country.

Two other recent papers are also of interest with respect to the implications of zoning in analyzing the effects of the property tax. Fiscal zoning limiting the construction of multi-family housing units is often justified on the grounds that it limits the extent of “free-riding” on local public services, especially education, in heterogeneous communities. However, in a recent *NTJ* article that uses a comprehensive set of data from Massachusetts communities, **Gallagher (2019)** shows that more aggressive fiscal zoning with respect to multi-family structures reduces per-student property values, and thus actually increases the property tax burden on single-family homes. This result obtains for his sample because multi-family structures in Massachusetts have disproportionately fewer students than single-family homes, that is, multi-family structures have relatively high per-student property values.

From a more theoretical perspective, Barseghyan and Coate (2016) construct the first dynamic model of the effects of the property tax that includes both endogenous housing and endogenous zoning decisions that provide for grandfathering of existing homes. They obtain two main results. First, they show that with endogenous zoning the incentives facing existing residents imply that there is no efficient stable equilibrium in their model. The basic intuition underlying this result is that in an efficient equilibrium the residents of low-quality housing communities will always face an incentive to impose more stringent zoning, as it will both increase their home values

and potentially lower their tax prices. Barseghyan and Coate (2016, p. 3) argue that this result “directly contradicts Hamilton’s argument and the Benefit View of the property tax.” They then simulate inefficient equilibria with endogenous zoning. In their model, existing residents utilize zoning to extract rents from future residents and lower their own tax price for public services. This results in a long run equilibrium that is characterized by inefficient over-zoning and over-consumption of housing rather than the optimal level of housing consumption envisioned under the benefit tax view. Indeed, in this equilibrium, zoning lowers average welfare relative to the equilibrium without zoning. At the same time, however, their model is (unrealistically) characterized by perfectly homogeneous communities in the long run, in which case public services are provided efficiently and financed by a property tax that does act as a benefit tax from this perspective.

## 6. Summary

Arguably the most provocative article on the incidence of the property tax that has appeared in the *NTJ* (and elsewhere) is the recent contribution by Oates and Fischel (2016), which concludes that the benefit tax view applies to roughly 70 to 80 percent of the U.S. population. This conclusion raises (or revisits) many issues related to the longstanding debate on whether the benefit view or the capital tax view best describes the incidence of the property tax. In particular, numerous factors suggest that the applicability of the benefit view of the property tax is much less than suggested by Oates and Fischel, including (1) the heterogeneity of central cities which traditionally has been viewed as implying that the assumptions underlying the benefit view are not satisfied, (2) the extent to which the link between benefits received and taxes paid for education expenditures has been broken by widespread fiscal equalization reforms, (3) the implications of new construction in the form of teardowns and infill investments in

existing communities, (4) the implications of perfect capitalization, and (5) the extent to which – depending on location – zoning is either not binding or much more restrictive than required for the benefit view to apply.

Two additional points are of interest. First, as stressed by McGuire (1999) and discussed previously, the pervasiveness of property tax limitations and evidence of their effects in reducing public expenditures and tax revenues is generally consistent with the Leviathan model rather than the Tiebout model extended by Hamilton and Fischel to include the property tax coupled with zoning as a benefit tax. Second, it is interesting to note that the most highly cited paper on the property tax by far (and the third most highly cited paper overall) that has appeared in the *NTJ* is the analysis of local government tax competition by **Brueckner and Saavedra (2001)**. They emphasize that “local property taxes are the best real-world analog to the capital taxes analyzed” in the tax competition literature – which clearly assumes the validity of the capital tax view of the property tax – and find that local governments in Massachusetts do in fact engage in local property tax competition (Brueckner and Saavedra, 2001, p. 204). More generally, the voluminous tax competition literature, reviewed by Wilson (1999) – which, as noted previously, is the most cited paper that has appeared in the *NTJ* – suggests considerable interest in the implications of the proposition that the property tax is best modeled as a capital tax.<sup>35</sup>

## V. CONCLUSION

Over the past 75 years, the *National Tax Journal* has played an essential role in advancing the understanding of the effects of the property tax, publishing much state-of-the-art

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<sup>35</sup> In addition, data presented by Wassmer (2007) indicates that the use of property tax abatements as an element of tax competition has been increasing over time.

research, often involving innovative empirical studies, as well as comprehensive expositions of the key issues raised by the tax considered from many perspectives. As highlighted in this study, these articles have covered a wide range of issues, including many traditional academic inquiries as well as administrative, legal, and policy topics that are not often the focus of the academic literature but of considerable interest to the broad and multi-disciplinary audience that characterizes the readership of the *NTJ*. A central message of this article is that many of these issues are still not fully resolved, and numerous recently published papers in the journal clearly suggest that the *NTJ* will continue to play a critical role in increasing our understanding of the effects of the property tax – as it no doubt will for all aspects of public economics.

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