Strengthening the Local Property Tax:
the Need for a Property Tax Expenditure Budget

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Lincoln Institute of Land Policy
Working Paper

Lincoln Institute Product Code: WP11KC1

Abstract

The property tax is the most important source of local revenue. But while it is widely believed to be fair, efficient, and simple to administer, in practice it has begun to drift from these ideals. Some of the factors that undermine the property tax are beyond the control of local officials. Others, however, are not, and they continue to exacerbate problems with the property tax that are detrimental to local governments. This paper explores the concept of state tax expenditure budgets and their potential role in informing the debate on various property tax policies that cost local governments own-source revenues.

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Table of Contents

Introduction **1**

The Tax Expenditure Concept **2**

State Treatment of Property Tax Expenditures **3**

State Limits on Local Property Taxes **9**

Assessment Limits **13**

Estimating Foregone Revenue Resulting From Assessment Limits **16**

Estimating Consequences of Assessment Limits **21**

Case Study: Los Alamos County **23**

Case Study: San Juan **32**

Conclusion **38**

References **41**

Appendix A **47**

Appendix B **59**

Strengthening the Local Property Tax: The Need for a Property Tax Expenditure budget

Introduction

Property taxes are the most important source of local revenues. In FY 2008, local governments raised $397 billion in property tax revenues, more than any other single source of state and local revenues. The property tax accounted for 28.3 percent of local general revenues nationally, 45.3 percent of local own-source revenues and 72.3 percent of local tax revenues. In 1967, the comparable property tax shares were 43.2 percent, 66.2 percent and 86.6 percent respectively.[1]

Most economists agree that the property tax is a good tax for local governments because it scores well on the basic criteria used to evaluate the strengths and weaknesses of individual revenue sources vis-à-vis other potential local revenue sources. The property tax is generally thought to be a productive revenue source, which is fair and efficient, simple to administer and promotes accountability by linking taxes paid with services provided. In reality, however, the property tax is becoming further and further from these ideals because of its increasingly narrow focus, policies that create distortions to private decision making by favoring some land use types more than others, the administration of the tax is becoming less uniform and less fair and the tax is becoming less accountable because of "the confusing and opaque jumble of special provisions that accumulate as the broad base of the property tax is destroyed." (Witte, 2009, p. 314)

Some factors undermining the role of the property tax are beyond the control of local decision makers. For example, the economy-wide shift from manufacturing to services, technology and information results in less commercial land, fewer plants, and less equipment subject to property taxation. However, there are a number of public policies pursued at the state and local level that exacerbate problems with the property tax to the detriment of local governments. For example, businesses are increasingly mobile and local politicians vie for jobs by offering property tax breaks as incentives for businesses to locate in their jurisdiction. In addition, structural changes in the economy contribute to a shift in the composition of the property base, and resulting tax liabilities, from commercial to residential owners. As homeowners experience increases in property tax liabilities, they pressure politicians to provide property tax relief through a variety of mechanisms.

In search of a solution for reducing the gap between ideal property tax systems and actual property tax systems, Witte (2009) suggests that strengthening transparency of the property tax system may help. He mentions two tools that improve overall transparency; first, there are truth-in-taxation laws that give voters more information about property taxes and rates, and second, there is the idea of a tax expenditure budget which identifies public policies that deprive local governments of property tax revenues and result in distortions that could ultimately undermine the legitimacy of the tax. This paper explores more fully the concept of state tax expenditure budgets and their potential role in informing the debate on various property tax policies that cost local governments own-source revenues.

[1] US Census Bureau, 1982 Census of Governments, Volume 6, Number 4, *Historical Statistics on Government Finances and Employment*, Table 14.

The next section provides an overview of the concept of tax expenditure budgets, which is followed by a discussion of the experience of states with tax expenditure budgets, with a special focus on property tax expenditures. The section following it focuses on the one intervention which most seriously undermines the uniformity of the property tax, assessment limits, an increasingly popular means of providing property tax relief, and examines how states estimate tax expenditures associated with such limits.[2]

The Tax Expenditure Concept

Stanley Surrey, Assistant Secretary for Tax Policy in the U.S. Treasury Department, coined the term "tax expenditures" in 1967. The Treasury department first published a tax expenditure budget of federal personal and corporate income taxes in 1968. Six years later, the Congressional Budget and Impoundment Control Act of 1974 defined tax expenditures in the law and began requiring that the federal budget include a list of tax expenditures (Harris 1997, 385; Pomp 1988, 66).

The Congressional Budget Act of 1974 defines tax expenditures as "revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of liability" (Public Law 93-344; USGPO 2009). In compliance, the Congressional Budget Office began publishing an annual tax expenditure report and the Office of Management and Budget began including tax expenditures in the president's annual budget request to Congress in 1974 (Pomp 1988, 66).

Tax expenditures, however, should not be viewed simply as a government accounting and reporting system. Surrey argued that these special provisions in the tax code were equivalent to taxing everyone at the full tax rate and then giving some taxpayers preferred treatment by subsidizing taxpayer activities. As Surrey explained in 1968, tax expenditures are a form of spending. In other words, "(direct spending) represents an allocation of benefits from current resources. In contrast, the tax expenditure represents an allocation of benefits financed by foregoing the receipt of future resources" (Harris, 1997, 386). Thus, tax expenditures should properly be viewed not as revenue policies, but as spending programs.

Gravelle elaborates on the implications of shifting the focus of tax expenditures from tax policy to spending policy:

> "Because any qualified taxpayer may reduce tax liability through use of a tax expenditure, such provisions are comparable to entitlement programs under which benefits are paid to all eligible persons. Because tax expenditures are generally enacted as permanent legislation, they are not renewed each year and thus are not subject to automatic review." [Gravelle, 2005, 407]

By converting what appear to be problems with tax reform to problems of spending reform, the

[2] The term, "tax expenditure budget" differs from "tax expenditure report" in that the former forecasts the costs of tax expenditures in upcoming years and the latter retrospectively calculate the costs of previous years (Levitis et al 2009, 9). In this paper, the terms are used interchangeably.

tax expenditure mind set involves asking a different set of questions associated with spending programs: what is the goal of the program, how cost effective is the approach, what are the distributional consequences of the program and should the program be replaced with a direct expenditure program? [Ladd, 1994, 50-51] Ladd supports the concept of tax expenditure budgets because

> "Given the strong historical, institutional, and political pressures to continue using the tax system not just as a revenue-raising device, but also as a policy tool, it is essential that we have a way to account for and scrutinize the special provisions that provide incentives or subsidies to particular activities or groups of individuals." [Ladd, 1994, 55]

The next section discusses how this concept of a tax expenditure budget is implemented in the 50 states. The primary focus of this discussion is on how property tax expenditures are treated as a way of shining a light on what Witte described as "the confusing and opaque jumble of special provisions that accumulate as the broad base of the property tax is destroyed." (Witte, 2009, p. 314)

State Treatment of Property Tax Expenditures

Tax expenditure budgets can play an important role in providing information for decision makers and the public regarding the revenue loss from preferential provisions in the tax structure. They have the potential of identifying the budgetary costs of using the tax system to achieve non-revenue raising objectives as suggested by Ladd. This increased transparency in state policy can facilitate a discussion regarding the benefits and costs of supporting preferred activities through direct spending or supporting them through tax preferences. [Mikesell, 2002]

California was the first state to pass legislation calling for reports on tax expenditures in 1971 and the first state to publish a report with revenue loss figures for FY1976 (Benker 1986, 407). The practice of preparing tax expenditure budgets in the states has increased significantly in recent years: 15 states published tax expenditure budgets in 1984, 33 states published them in 2001, and 41 states and the District of Columbia published them in 2009 (Benker 1986, 407; Mikesell 2002, 37; Levitis et al 2009, 1). Since that last formal inventory, Indiana and New Jersey have developed tax expenditure budgets, and tax expenditure reporting has recently been authorized in Georgia. [Mikesell, 2010, 411-412]

Mikesell (2002) provides an overview of state practices regarding the preparation of tax expenditure budgets. He describes the variation in practices across states for a number of features of tax expenditure budgets including whether they include state or state and local tax expenditures, whether they include all state taxes or just selected taxes, whether they are done by the executive or legislative branch, whether they are part of the annual budget cycle and how they define tax expenditures.

State tax expenditure budgets generally cover a wider array of taxes than the federal government, which focuses primarily on individual and corporate income taxes. Tax expenditure reports at the state level focus on personal income, corporate, and sales tax, and may also include selective sales taxes and local property taxes. Mikesell examines how states treat sales taxes in their tax expenditure budgets. [Mikesell, 2001] The purpose of this paper is to explore how states treat

property taxes in their tax expenditure budgets.

The Center on Budget and Policy Priorities counted 18 states and the District of Columbia that include property tax expenditures in their tax expenditure budgets (Levitis et al 2009, 14).[3] Of the 18 states that include property tax expenditures in their reports, 15 states estimate foregone revenues for real property separately from personal property. Arizona and Utah do not separate estimates of foregone real property tax revenue from foregone personal property revenue. The District of Columbia mentioned a total estimate for property tax expenditures in the revenue chapter to its FY 2007 Budget and Financial Plan, but it did not separate real and personal property, and no such estimate existed in the FY 2009 Plan. California does not consider property taxes as state tax expenditures: "Property taxes are local taxes, and the legislative exemptions or preferential provisions do not constitute state tax expenditures" (California 2009, 4). California estimates that local governments lose "in excess of $100 million" in revenue from property tax exemptions. State aid makes up for the difference between local property tax allocations and school districts' revenue limits, however the report does not provide an estimate of the cost to the state.

Finally, Nebraska calculates the revenue forgone by local counties, but the state reimburses the counties 100 percent of foregone revenues. Since these reimbursements go through the normal budgeting process, they are not considered tax expenditures here. Our focus is on the other 14 states that include real property taxes in their estimates of tax expenditures.

Table 1 lists the 14 states that include property tax expenditures in their tax expenditure reports. Total property tax expenditures are over a billion dollars of foregone property tax revenues in five states, Wisconsin ($21.1 billion), Florida ($16.9 billion), Michigan ($8.5 billion), Texas ($3.0 billion) and Minnesota ($1.9 billion). Two states list property tax expenditures of less than $100 million, Kansas ($44.1 million) and Montana ($2.2 million).

The major property tax expenditures identified in each state fall into six major categories – Exempt Property (Homestead and Other), Assessment Limits, Credits/Refunds, Agricultural and Forest Preferential Treatment, and Business Incentives. Florida has the most comprehensive property tax expenditure report including estimates of foregone revenue in each of these six categories. Three states list estimates of foregone revenues for five categories (Michigan, Minnesota and Oregon), while six states include estimates of foregone revenues for three categories (Kentucky, Maryland, Texas, Vermont, Washington, and West Virginia).

As Mikesell documented for state tax expenditure reports generally, these 14 states differ in how they define and measure property tax expenditures.

[3] Arizona, California, District of Columbia, Florida, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Montana, Nebraska, Oregon, Texas, Utah, Vermont, Washington, West Virginia, and Wisconsin

Table 1: State Real Property Tax Expenditures[1] (millions)

States	Total	Exempt Property		Assessment Limit	Credit/ Refund	Agriculture/ Forest Preference	Business Incentive	Other	Year
		Exempt Homestead	Exempt Other						
Florida[2]	16,925.7	2807.7	10457.7	2,475.90	143.2	992	6.3	42.9	FY 2011
Kansas[3]	44.1				44.1				CY 2009
Kentucky[3]	399.3		0.02			0.1	0.022	399.2	FY 2010
Maine[3]	116.5				50.3		66.1		FY 2010
Maryland[3]	223.1		86.4	78.9	57.8				FY 2010
Michigan[2]	8,467.2	3,670	984.5	3,400	49		363.7		FY 2010
Minnesota[4,5]	1,937.20	490	1,294.20		11.6	75.5	9	56.9	FY 2010
Montana[5,6]	2.2				2.2				CY 2010
Oregon[3,7]	4,674	2.1	3,625		26.2	804	192.6	23.9	2009-2011
Texas[2]	2,962.70			293.2	1,744.50		185.5	739.5	CY 2010
Vermont[3]	219.7		73.2		116.2		0.127	30.2	FY 2008
Washington[2,8]	552.7		190		198.8	143.4		10	CY 2010
West Virginia[2]	186.429	44.02	79.789			17.6		45.02	CY 2007
Wisconsin[2]	21,072		21,072						FY 2008

Source: The states with state tax expenditure budgets included in this table were identified in Levitis, Jason, Nicholas Johnson, and Jeremy Koulish (2009) "Promoting State Budget Accountability Through Tax Expenditure Reporting," *Center on Budget and Policy Priorities*, April. The estimates in this table are author calculations based on updated reports from each state. See the Appendix A for detailed reference information for each state expenditure budget.

Table 1 Footnotes

[1]Table 1 summarizes the estimates of foregone real property tax revenues for categories of tax expenditures for each state. State reports that combine both real and personal property are not included here because the focus here is on real property. Though some state Tax Expenditure reports include TIFs as tax expenditures, this report does not. For TIFs, taxes are earmarked for certain expenditures rather than going into the general fund. Here, items are considered tax expenditures only when revenue is actually foregone.

[2]These states report estimates of foregone revenue to state and local governments combined: Florida, Michigan, Texas, Washington, West Virginia, and Wisconsin

[3]These states report estimates of foregone revenue to the state government only: Kansas, Kentucky, Maine, Maryland, Oregon, and Vermont

[4]Minnesota uses a classification system to apply different rates to different classes of property. Minnesota's report includes a table that shows the difference in revenue if one class rate were applied to all classes of property. The table in the report includes both positive and negative amounts. The positive amounts show the foregone revenue, or tax increase that would occur if one class rate were applied to all types of property, and are therefore considered tax expenditures. Minnesota does not consider as tax expenditures the negative amounts that show the other side of the shift in tax burden. The total for Minnesota includes the positive amounts $534 million in the table. Minnesota's classifications suggest that if one class rate were applied to all property, the net change would only be $5 million, as opposed to the $534 million included in the total. Since this table considers foregone revenue, we include $534 million.

[5]These states report estimates of foregone revenue to the local governments only: Minnesota and Montana

[6] Montana reports both the shift and loss, but does not indicate which number the state considers to be the cost of tax expenditures. Only the loss figures are included in this summary table. See Appendix A for estimates of the shift.

[7]Oregon's numbers are larger because it calculates two years 2009-2011. Other states estimate one year at a time. Oregon calculates both shift and loss; only the loss is included in this summary table. See Appendix A for estimates of the shift.

[8]These estimates for Washington sum the costs to the local and state governments. Appendix A details the cost to the local and state governments for each tax expenditure as found in the state tax expenditure report.

Defining Property Tax Expenditures

Mikesell (2001) argues that the most important requirement for a tax expenditure budget is that it makes a clear distinction between what is considered a normal (benchmark or baseline) tax structure and deviations from that standard. It is critical, in this view, that state tax expenditure budgets make a clear distinction between normal tax structure (based on principles of tax policy) and preferences that deviate from that baseline case (the portions of the structure that embody budget policy to achieve non-revenue objectives) (Mikesell, 2001). For example Maryland makes a distinction between "Structural" tax expenditures which are part of the tax structure, and "Categorical" tax expenditures which are narrowly defined provisions that have an easily defined set of beneficiaries and address more or less discernable policy goals.

States usually use the federal method of defining the normal tax structure as a guide for the baseline of state income taxes. Mikesell (2002) identifies state baselines used for retail sales tax (for which there is no federal model) and showed that most states use what he terms reference law. Mikesell finds that West Virginia and Minnesota construct an ideal base; Kansas, Kentucky, Maryland, Michigan, Montana, and Washington use reference law; and Florida, Nebraska, and Texas create revenue reducer lists.

A review of the tax expenditure reports for the 14 states that include property tax expenditures documents that for property taxes the baseline tends to be all real property or all real property except property exempt in the State Constitution and/or by the federal government. For example, some states discuss an intentional baseline in the reports such that it sounds like a conceptual baseline, but the baseline is often all real property. Thus intentionally or implicitly, many states consider all real property as the normal tax structure, and tax expenditures as provisions in statute, constitution, and federal law. For example, Wisconsin explains, "The state establishes policies regarding what real and personal property is subject to the local property tax, guided by the uniformity clause of the state constitution, which prohibits differential treatment of most property including partial exemptions" (Wisconsin 2009, 2).

Kentucky provides another example. In the introduction, the report explains, "Not all deductions and exemptions allowed under the laws are classified as tax expenditures. Tax expenditures are best described as deviations from the "normal" or "appropriate" tax structure" (Kentucky 2010, 7). Yet the baseline for the property tax is all real property; tax expenditures are identified as exemptions in the Kentucky Constitution. "The property tax is levied on the fair cash value of all real, tangible, or intangible property unless a specific exemption exists in the Kentucky Constitution, or in the case of personal property, has been granted by the General Assembly" (Kentucky 2010, 112).

Montana's report indicates that they use a conceptual baseline, but property tax expenditures appear to include all provisions in law. In the introduction, the report "defines tax expenditures to be provisions of the tax law that deliberately depart from the general structure of the tax, generally with the goal of influencing taxpayer behavior. For each tax considered, this report first identifies the general structure of the tax – the general rules for what is included in the base and the normal rate structure. It then identifies exceptions from these general rules" (Montana 2010, 206). The section on property taxes does not identify the general structure of the tax, stating: "Consistent with the explanation of other tax expenditures, property tax expenditures are provisions in the property tax laws that reduce property taxes for properties that meet certain criteria" (Montana 2010, 267).

Oregon also intentionally considers all property to be taxable. "(The 1995 Budget Accountability) Act defines a tax expenditure as: any law of the Federal Government or of this state that exempts, in whole or in part, certain persons, income, goods, services, or property from the impact of established taxes, including, but not limited to tax deductions, tax exclusions, tax subtractions, tax exemptions, tax deferrals, preferential tax rates, and tax credits."… "The tax base for the property tax is considered to be all property in Oregon. Tax expenditures occur when certain property is removed from the assessment roll and thus excluded from taxation" (Oregon 2009, 1 and 205).

Michigan embraces the subjectivity of the definition of tax expenditures and admits to using, in Mikesell's (2002) terms, a revenue reducer list, which results in the same baseline as the previous states: all real property. "Classifying items as tax expenditures is a subjective process. Some argue that the tax expenditure definition should be as broad as possible, encompassing all deductions or credits that reduce the taxable base from 100 percent of income or wealth. Others recommend a more narrow definition that includes only those tax deductions or credits that are adjustments to the "normal" or appropriate tax structure. The narrow tax expenditure definition reserves the term tax expenditure for items that are true substitutes for direct spending. This report does not make any assumptions regarding the correct definition of the term tax expenditure but rather reports all exemptions, deductions, and credits that are explicitly outlined in statute" (Michigan 2009, 1 – 2).

Whether intentionally defining tax expenditures (Wisconsin, Kentucky, Oregon, and Montana) or explicitly not defining them (Michigan), the baseline for all of these states' is all real property. Any exemption, credit, etc. identified in the State Constitution, statute, or federal law is considered a tax expenditure.

Two states appear not to include all real property in the baseline. Minnesota does not consider exemptions in the state Constitution or federal law as tax expenditures: "Property that is exempt from the property tax by statute is included in the estimates below. The estimates do not include property that is exempt under either the Minnesota Constitution or federal law, including churches, academies, colleges, universities, and Indian reservations" (Minnesota 2010, 173). Minnesota does not include the "circuit-breaker" refund program or the refund program for property tax increases over 12 percent in estimates of foregone revenue due to tax expenditures because the refund is considered a direct expenditure and estimated in the budget of direct spending (Minnesota 2010, 172). Maryland estimates all property tax exemptions except for tax credits: "Property tax credits are not included in this report since funds required to pay those credits are appropriated through the regular budget process" (Maryland 2010, 3).

Local or State Tax Expenditures

The property tax is a local tax, but it is state law that empowers local government to administer it. Some states' statutes and Constitutions include provisions that exempt types of property from taxation.[4] Mikesell (2002) explains most state tax expenditure budgets report only state taxes because measuring the numerous and various preferences offered in each community would be too time and resource-consuming. Some states include major local taxes outlined in the state framework of local options (page 41). Some states estimate tax expenditures that cost the state government, some states estimate the cost to local governments, some estimate both, and other states are unclear as to which level of government the estimate of lost revenue applies.

Maryland, and Vermont estimate only the impact of exclusions on the state government.[5] Michigan and Washington provide separate estimates for the state and local government. Michigan distinguishes by which level of government collects the tax, not which level of government is affected by the tax expenditure. Michigan only estimates local tax expenditures implemented statewide. Florida combines state and local estimates for property tax expenditures. Minnesota and Oregon calculate only local property tax expenditures. Minnesota's budget includes every local tax that is applied statewide. The report only estimates local property tax provisions, which are collected by the counties and remitted to the state. The report does not estimate the state general property tax levied on commercial, industrial, and seasonal recreation property (Minnesota 2010, 172). Oregon specifies that the report does not include the loss to the state general fund from the replacement to local governments for property tax revenue lost to school districts from property tax expenditures.

Levitis et al (2009) argue that state reports should include tax expenditures that affect local revenues. State law authorizes local tax systems, so lawmakers need to understand the costs associated with those systems. In addition, local governments turn to state direct aid when they have a shortfall in their budget. Levitis et al (2009) suggest that states should consider all

[4] "A Guide to Property Taxes" *National Conference of State Legislatures*, webpage last updated August 2004, http://www.ncsl.org/default.aspx?tabid=12668

[5] Maryland includes a caveat, "In general, exclusions from the state tax base are also exclusions from the local tax base, so the state tax expenditures are accompanied by local tax expenditures. The amount of the local tax expenditures depends on the tax rate set by each local government" (Maryland 2010, 3).

options, such as repealing a mandated local tax expenditure in lieu of increasing state aid (page 18). States should estimate state and local costs separately to inform decisions at both local and state levels (page 23).

Reducing vs. Shifting Property Tax Liabilities

Another important issue in estimating property tax expenditures is whether to include the loss of revenue to the government, the shift of tax burden to other taxpayers, or both in tax expenditure estimates. The property tax burden can shift or transfer to non-beneficiary taxpayers when an exemption is granted if local governments are allowed to raise mills to offset a reduction in the tax base. Raising mills results in higher taxes for non-beneficiaries, a shift of the property tax burden from beneficiaries to non-beneficiaries without affecting the total revenue (Levitis et al 2009, 6; Montana 2010, 267). The combined total of shift and loss is the total impact of the tax exemption.

Montana and Oregon show shift and loss calculations in tables in their reports, which totals the impact of the tax expenditures, however, they do not necessarily include both the shift and loss in the tax expenditure estimates. Oregon appears to only consider the loss to the government in the estimate of the tax expenditures. It is unclear if Montana considers only the loss or if it considers the loss and shift as tax expenditure cost (Montana 2010, 267 – 269; Oregon 2009, 205 – 326). Washington and Minnesota's reports explain that the impact of removing the property tax exemptions in their states would be a broader tax base, not a change in revenue yield to the government because tax rates would change (Washington 2008, Introduction – 19 and page 1; Minnesota 2010, 172). The general consensus on tax expenditure estimates is that they are foregone revenue holding all else constant. Thus, one could interpret the Washington and Minnesota estimates as foregone revenue holding rates constant. Since, the states can predict how the rates would change, one could alternatively interpret their estimates as a shift in tax burden. Washington and Minnesota's reports use the general term, "fiscal impact," to describe the estimates of the tax expenditures. The authors of Wisconsin's report argue that states should publish calculations of both the shift and loss of revenue to provide full information for lawmakers to evaluate the impact of property tax exemptions (Wisconsin 2009, 2-3).

State Limits on Local Property Taxes

A new data set created by the Lincoln Institute of Land Policy and the George Washington Institute of Public Policy, **Significant Features of the Property Tax**, shines a light on what Witte referred to as the "opaque jumble of special provisions" which undermine the property tax.

Table 2 identifies which states have which of the three most common types of property tax limits – assessment limits, levy limits and rate limits. In 2008, according to these data, 20 states and the District of Columbia had some form of assessment limit, 34 states have some form of property tax levy limit and 36 states have some form of property tax rate limits. According to data in Table 2, 10 states and the District of Columbia use all three types of limits to restrict property taxes, 23 states use two of the three limit types, and just 5 states (Hawaii, Kansas, New Hampshire, Tennessee and Vermont) do not employ any of these property tax limits.

Table 2
Significant Features of the Property Tax

State Limits on Property Taxes
2008

State	Assessment Limit	Levy Limit	Rate Limit
Alabama			X
Alaska		X	X
Arizona	X	X	X
Arkansas	X	X	X
California	X		X
Colorado	X	X	X
Connecticut	X		
Delaware		X	
District of Columbia	X	X	X
Florida	X		X
Georgia	X		X
Hawaii			
Idaho		X	X
Illinois	X	X	X
Indiana		X	X
Iowa	X		X
Kansas			
Kentucky		X	X
Louisiana		X	X
Maine		X	
Maryland	X		
Massachusetts		X	X
Michigan	X	X	X
Minnesota	X	X	X
Mississippi		X	
Missouri	X		X
Montana	X	X	X
Nebraska		X	X
Nevada		X	X
New Hampshire			
New Jersey		X	
New Mexico	X	X	X
New York	X	X	X
North Carolina			X
North Dakota		X	X
Ohio		X	X
Oklahoma	X		X
Oregon	X		X
Pennsylvania		X	X
Rhode Island		X	
South Carolina	X	X	
South Dakota		X	X

Tennessee			
Texas	X	X	X
Utah			X
Vermont			
Virginia		X	
Washington		X	X
West Virginia		X	X
Wisconsin		X	X
Wyoming		X	

Source: Significant Features of the Property Tax, Special Report, Lincoln Institute of Land Policy and George Washington Institute of Public Policy https://www.lincolninst.edu/subcenters/significant-features-property-tax.edu

In addition to these various property tax limitations, states also provide preferential treatment to a variety of property based on land use. Table 3 documents the widespread use of the most common preferential treatment programs across the 50 states. According to Table 3, all 50 states have some sort of program giving preferential treatment to farmland for property tax purposes. The next most popular program provides preferential treatment for timberlands (30 states), followed by programs for open spaces (23 states) and historic properties (11 states). In addition there are a number of exemptions provided in each state based on land use types and the characteristics of property owners.

Table 3
Significant Features of the Property Tax

Preferential Treatment of Properties

2008

State	Farmland	Timber	Historic*	Open Space
Alabama	X		X	
Alaska	X			
Arizona	X			X
Arkansas	X	X		
California	X	X	X	X
Colorado	X	X		X
Connecticut	X	X		X
Delaware	X	X		
District of Columbia			X	
Florida	X		X	X
Georgia	X	X	X	X
Hawaii	X		X	
Idaho	X	X		
Illinois	X	X	X	X
Indiana	X	X		
Iowa	X		X	

Kansas	X			
Kentucky	X			
Louisiana	X			
Maine	X	X		X
Maryland	X			
Massachusetts	X	X		X
Michigan	X	X		X
Minnesota	X	X		X
Mississippi	X			
Missouri	X	X		
Montana	X	X		
Nebraska	X			
Nevada	X			X
New Hampshire	X	X		X
New Jersey	X			
New Mexico	X			
New York	X	X		
North Carolina	X	X	X	
North Dakota	X	X		X
Ohio	X	X		X
Oklahoma	X			
Oregon	X	X	X	X
Pennsylvania	X	X		X
Rhode Island	X	X		X
South Carolina	X			
South Dakota	X			
Tennessee	X	X		X
Texas	X	X		X
Utah	X			
Vermont	X	X		X
Virginia	X	X		X
Washington	X	X		X
West Virginia	X	X		
Wisconsin	X	X	X	
Wyoming	X			

* Does not include any property tax relief based on the increased value due to improvements made to historic properties.

Source: Significant Features of the Property Tax. https://www.lincolninst.edu/subcenters/significant-features-property-tax. Lincoln Institute of Land Policy and George Washington Institute of Public Policy.

Generally, one goal of implementing the property tax is to administer it in a uniform way across properties within the same land use class and across land use classes. Such uniformity promotes horizontal equity (treating properties with similar market values similarly) and vertical equity (higher value properties pay higher property taxes). Limits on property tax rates and property tax levies do not violate this uniformity objective. Assessment limits, however, undermine uniformity and result in different effective property tax rates across properties in the same land

use class with the same market values (Anderson, 2006, 692).[6] This paper takes a closer look at assessment limits because of their recent rapid growth and their devastating impact on undermining the uniformity and equity of the property tax, which, in the long run, can undermine the credibility, legitimacy and acceptance of the property tax. The next section summarizes trends behind the growth in assessment limits and that is followed by a discussion on how the limits are treated in state property tax expenditure budgets.

Assessment Limits

Sexton (2009, Table 5.1) identifies 19 states and the District of Columbia as having some form of limitation on the growth in assessed values. According to Sexton (2009, Table 5.1) fifteen of the 19 states have statewide, uniform assessment limits, 3 states (Connecticut, Georgia, and Illinois) offer assessment limits as local option, and New York mandates assessment limits in New York City and Nassau County. Ten states enacted assessment limits as constitutional amendments: Arkansas, California, Colorado, Florida, Georgia, Michigan, Oklahoma, Oregon, South Carolina, and Texas.

Assessment limits vary by state ranging from 2 percent in California to 15 percent in Minnesota. The assessment limits in other states include: 3 percent in Florida, Oregon, and New Mexico; 15 percent over 5 years in South Carolina; 5 percent in Arkansas, Michigan, and Oklahoma; a range of 6 to 8 percent in New York City; 7 percent in Cook County, IL; 10 percent in Arizona, District of Columbia, Maryland, and Texas. Georgia provides a local option of an assessment freeze, and 19 of 159 counties have frozen residential values. Unlike the other states, Iowa applies its 4 percent assessment limit to classes of properties (residential, agricultural, and commercial) rather than to individual parcels. Colorado also applies an aggregate cap by limiting the residential part of the tax base to 45 percent of the total (Haveman and Sexton 2008, 8, 12-15 and Sexton, 2009, Table 5.1).

Some states apply assessment limitations to all property or to homestead property only. Maryland, Florida, Texas, and New Mexico limit assessments on homesteads only (Sjoquist and Pandey 2001, 2). Only three states have assessment limits without revenue or rate limitations (Connecticut, Maryland, and South Carolina). Nine states have levy limits and tax rate limits, one state has levy limits only, and seven have only rate limits (Anderson 2006, 688-689).

Most limits on assessed values include a provision called the acquisition value feature that recalibrates the assessed value to reflect market value when the property changes ownership. Only 3 states, Arizona, Minnesota, and Oregon, do not have the acquisition value feature of the 18 states that limit assessment value increases of individual parcels (Haveman and Sexton 2008, 14).

Motivations for Assessment Limitations

[6]Anderson (2006) observes that only 21 states have mandatory annual reassessments and those with non-annual reassessments in effect have a zero percent cap on assessment increases between reassessments which also undermines the uniform administration of the property tax thereby undermining horizontal and vertical equity.

In a 30-year review of assessment limitations and their effects on the property tax base, Haveman and Sexton (2008) explain the popularity of assessment limits as a response to rapid and large increases in property values that result in an unexpected rise in residents' property tax bills. Limits on assessment are perceived as a direct response to rising values of properties by providing predictability and stability in residents' tax bills. In his exploration of motivations behind property tax limits, Anderson (2006) proposes that assessment limits provide insurance to taxpayers. The insurance benefit is eliminating the risk of an unexpected higher property tax bill in the future. The cost of the insurance is the foregone tax break that would be received if the property appreciates less than the assessment limit (Anderson 2006, 690).

The campaign to pass the Save Our Homes amendment that limits assessments in Florida centered arguments on helping the elderly and low income residents who could not afford tax increases of property value increases stay in their homes (University of Florida 2007, 12 – 13). The University of Florida (2007) study's model of the percentage of yes votes on the amendment suggest that senior and minority voters viewed the amendment as benefiting wealthy homeowners. Furthermore, the percentage of yes votes increased 0.06 percent for every 1.0 percent increase in the county's average home value (page 15).

Interactions with Rate and Revenue Limits

Anderson (2006) explains why some states apply assessment limits in addition to revenue limits (10 of 29 states). Limiting total revenue does effectively restrict increases in individual property tax bills, but only if property values uniformly rise. If some property values appreciate dramatically and others do not, the former will still have unexpectedly higher tax bills (page 687).

Binding assessment limits (when the threshold is lower than the increase in market value) narrow the tax base and will either result in decreased revenue or an increase in tax rates (Sjoquist and Pandey 2001, 1). Rate limits often accompany assessment limits (in 16 out of the 20 states) because when only assessment increases are limited, some taxpayers will see their tax bills rise. The government can increase the tax rate in order to maintain the same level of spending. For example, Cook County increased the tax rate by 4.5 percent and the school districts increased their rates by 5 percent in 2005 in order to maintain revenue under the 7 percent assessment limit. Dye et al (2006a) and (2006b) explain that some homeowners' assessed values reduced by the limit still paid higher tax bills than without the limit because of the increased tax rates. Under policies that limit the assessment increase but not the rate, the tax burden shifts to properties ineligible for the assessment limit and from eligible properties with rapid growth to eligible properties with slow growth. Nonresidential properties and residential properties with appreciations less than the assessment limit would end up paying a higher property tax than if the assessment limit did not exist (Haveman and Sexton 2008, 22). To bar local governments from increasing the tax rate on the narrower tax base due to the 2 percent limit on assessment value increase, California limits the tax rate to 1 percent.

Preston and Ichniowski (1991) estimate the impact of various state limitations on the growth of property tax revenues. Using a first difference model, the authors find that tax rate limits accompanied by assessment limits are the most stringent constraint on local property tax

revenue, reducing the growth in property tax revenue by 40 percent. When compared to the impact of tax rates without assessment limits, the authors find that the coupling of rate and assessment limits reduce property revenue growth by 9.8 percent more than tax rates alone (page 123, 130).

Impact of Acquisition Value on Equity

Resetting values to reflect market values when a property is sold undermines horizontal equity. Property tax systems with horizontal equity apply similar tax burdens to similar properties. Under a system with the acquisition value feature, long-time owners are taxed less than new owners of properties similarly valued (Haveman and Sexton 2008, 26). O'Sullivan, Sexton, and Sheffrin (1995a) calculate that a new owner of a Los Angeles property sold in 1991 would pay 5 times more in property taxes than an owner of an identical property who has lived there since 1975, the base assessment value that increases 2 percent each year. Sheffrin and Sexton (1998) found that one third of the homeowners in Los Angeles County paid property taxes in 1996 on the 1975 assessed value increased by two percent annually, and 3.9 percent of homeowners paid taxes based on the market value in 1996. The ratio of actual property value to assessed value (disparity ratio) in 1996 was 3.84. In a study of four counties (Alameda, Los Angeles, San Bernardino, and San Mateo) O'Sullivan, Sexton, and Sheffrin (1994) find that California's acquisition value system benefited lower income homeowners and elderly on average relative to other homeowners because they tended to move less often.

Impact of Acquisition Value on Mobility

The acquisition value feature creates a disincentive for people to move because property owners lose their tax break when they sell and buy a new place. The longer an owner stays, the larger his or her tax benefit. Property tax liability can increase drastically even if the resident moves to a home of equal or lesser value. Faced with a large increase in property taxes, growing families may not move to a larger house putting pressure on the entry level housing market. Seniors may not downsize to a smaller house. Homeowners may not relocate with a job and deal with a longer commute. The disincentive to move is called the lock-in effect (Sexton 2008).

A centerpiece of the movement for Proposition 13 in 1978 was the problem that senior citizens were forced to sell their homes because they could not afford the rising property rates. By the mid 1980s the problem had become that seniors could not downsize to smaller homes because they could not afford to lose their tax benefit and pay taxes on the market value of the new home. California passed Proposition 60 in 1986 that allowed homeowners 55 years and older to transfer the assessed value of their former home to a new home of equal or lesser value in the same county. This portability feature is allowed only once in a lifetime. Proposition 90 in 1988 allowed senior homeowners to transfer the assessed value to a new home in a different county if the receiving county agrees (Sexton 2008).

Except for homeowners over the age of 55, the lock-in effect has a significantly negative effect on mobility in California. Studies of other states in Florida and Georgia did not find a significant lock-in effect (Sexton 2008). O'Sullivan, Sexton, and Sheffrin (1995b) estimate an 18 percent increase in the median length of residency with a mathematical model assuming a 3 percent tax

rate and property appreciation of 6 percent. Wasi and White (2005) estimate that California homeowners increased their average length of stay by .66 years from 1970-2000. Since California made the provision that homeowners 55 and older can take their limited assessed value with them, Ferreira (2004) found that 55 year olds are 25 percent more likely to move than 54 year olds in 1990 in California. Unlike the studies of California, Sjoquist and Pandey (2001) found that the zero assessed value limit in Muscogee County, Georgia did not have a significant effect on mobility.

Sexton (2008) and (O'Sullivan et al 1995a) argue that acquisition value property taxes add another transaction cost to moving. It creates a loss in economic well-being from "suboptimal housing consumption, inefficient labor market outcomes, longer commutes with associated environmental and congestion costs, a reduction in the supply of smaller homes for young and old home buyers, and reduced incentives for households to vote with their feet, thereby impeding the efficient provision of local public goods" (Sexton 2008).

Estimating Foregone Revenue Resulting from Assessment Limits

Conceptually, there are issues regarding how tax expenditures should be estimated. Arguments about tax expenditure reporting regard the feasibility of estimation and its utility for fiscal control mechanisms such as disclosure and review. Mikesell (2002) quotes OMB in the 2002 federal budget, "Due, in part, to the degree of arbitrariness in the tax expenditure baseline, the Administration believes the meaningfulness of tax expenditure estimates is uncertain . . . " (page 36; OMB 2002, 95).

Harris (1997) argues that the concept of a normative tax structure is "at the heart of the debate" about how to estimate tax expenditures (page 392). Bittker (1969) goes even further and questions the assumption that a normative tax structure even exists and if we have the ability to measure tax expenditures. From this perspective, Bittker (1969) argues that tax expenditure estimates are essentially irrelevant because of the difficulty of identifying and estimating them (Harris 1997, 392). This is not an issue for property tax expenditures because the baseline is all real property.

Estimates of tax expenditures also can be unreliable because no adjustment is made for the behavioral responses of taxpayers or other interactive effects. Therefore, estimates do not predict the revenue gained upon repeal of the tax expenditure. Secondary effects other than taxpayer behavior include: 1) without the tax expenditure, the taxpayer may receive a different benefit 2) without the tax expenditure, a loss of revenue-generating economic growth incentivized by the tax expenditure (Harris 1997, 394). An important secondary effect of repealing property tax relief measures is changing accompanying policies, such as the tax rate.

Some state reports discuss the assumptions they make when generating the estimates and provide cautions in interpreting the estimates. Kentucky, Michigan, Minnesota, Oregon, and Washington explain that they assume that eliminating a tax expenditure does not alter taxpayer behavior and economic activities, even though they recognize that realistically it would alter behavior. The tax expenditures are often designed to incentivize certain behavior. States also assume that each tax expenditure is independent from other tax expenditures, even though the repeal of particular tax expenditure would increase or decrease the losses associated with other remaining

provisions. Two tax expenditure estimates should not be summed because if two or more provisions were repealed at the same time, the combined impact could be larger or smaller than the sum of the provisions estimated separately; though, most reports sum the estimates for an estimate of total revenue lost due to all tax expenditures. Michigan also explains that the estimates assume the repeal of tax expenditures would not affect overall macroeconomic conditions, even though it could have an impact on overall income levels and rates of economic growth.

In sum, tax expenditures typically are treated as isolated events ignoring secondary and interactive effects. States caution that because of these assumptions an estimate cannot be interpreted as the change in revenue if the tax expenditure were repealed. Instead, Oregon explains that the estimates measure "what is being 'spent' through the tax system with respect to that one provision" (Oregon 2009, 3).

Another caveat of estimating foregone revenue is that the estimate is only as reliable as the data available. Reliability varies by estimate and by report. Some reports indicate the level of reliability. Washington's report, *Tax Exemptions 2008*, cautions that estimates should be understood as indicative of the order of magnitude rather than the specific dollar amount.

Surrey and McDaniel (1985) counter that some of the same limitations associated with tax expenditures apply to estimates of direct expenditures, and we rely on those estimates for budgeting: "If the interaction effect does not prevent the computation of direct budget totals, it should not prevent the computation of tax expenditure totals" (page 231). Summation of tax expenditures can provide meaningful comparisons of relative growth and distribution of tax expenditures among functional categories (Harris 1997, 394). Granted, there is less consensus on what comprises a tax expenditure and less precision in cost measurement, Surrey and McDaniel (1985) argue that the concept of a tax expenditure is not "fundamentally flawed" just because the classification of an item as a tax expenditure can be debated. Tax expenditures require continuous rethinking, a "continuing improvement of a country's tax and spending structures" (page 196).

Four states in Table 1 include estimates of foregone property tax revenues as a result of assessment limits. Michigan estimates that local governments lost $3.4 billion in property tax revenues in 2010 because of the 5 percent assessment limit, and Florida estimates that local governments lost $2.5 billion in 2011 because of their Save Our Homes 3 percent assessment limit.[7]

Two Examples: Michigan and Florida

Michigan has one of the most comprehensive tax expenditure reports and is one of the four states that estimates foregone property tax revenues as a result of assessment limitations. In 2010, local governments lost approximately $3.4 billion in property tax revenues because of assessment limits – the highest estimate of foregone revenues of the four states with such

[7] Hawkins (2006) estimates $1.82 billion (or 10.6 percent) in forgone property tax revenue for Florida counties and schools in 2004 (pages 8 – 9). The University of Florida (2007) estimates that the difference in tax base translates to nearly $8 billion in foregone tax revenue, assuming a tax rate of 2 percent (page 36).

estimates. These estimates are produced annually by the Office of Revenue and Tax Analysis (ORTA) within the Tax Analysis Division of the Department of Revenue (Michigan 2009).

Each taxing jurisdiction responsible for valuing property for tax purposes calculates two values for each property – the State Equalized Value (which is 50 percent of true cash value, or market value) and Taxable Value, which is the assessed value used to determine property tax bills. In 1994, the first year the assessment cap was in place, the state equalized value (SEV) equaled taxable value (TV). In each subsequent year, SEV is determined for each property based on the estimated market value of that property; using computer assisted mass appraisal techniques with appropriate adjustments based on assessment/sales ratios for that community. Taxable Value is determined by applying the applicable assessment cap, which is 5 percent or the rate of inflation whichever is lower.[8]

Each jurisdiction prepares a report for the state, which includes aggregate estimates of the SEV and TV for properties on their property tax rolls. Those reports are aggregated by county and then for the state. A statewide discrepancy between SEV and TV is determined and then an average statewide mileage rate is applied to that difference to produce the estimate of foregone revenues.[9]

Florida is the other state in Table 1 with an estimate of significant property tax losses as a result of assessment limits. Of particular interest here is the assessment limit approved by voters in 1992, popularly known as "Save Our Homes." Increases in assessed values for owner occupied residential homesteads are limited to 3 percent per year or the increase in the Consumer Price Index, which ever is lower. After a change in ownership or other termination of the homestead the property is reassessed at just value, which is market value minus transaction costs.

As a result of Save Our Homes, there is an increasing divergence in the just value and the actual assessed value used for tax purposes. Just value, the base of the state property tax, is estimated annually to reflect changes in market values, while assessed value, the base of the local property tax, is limited by assessment limits imposed in 1992. Both of these estimates are made by the local taxing jurisdiction and then collected by the state government to annually estimate foregone property tax revenues by applying statutory property tax rates for each jurisdiction to the difference between assessed values and just values for each parcel.[10]

Table 4 summarizes the trends in just value, assessed value and taxable value (net of all exemptions) over the last 8 years. Assessed values, constrained by the 3 percent limit in the growth of assessed values, decreased as a share of just value from 2004 through 2006. While there was only a marginal change in the ratio in 2007, the ratio has grown every year since 2007, increasing from 62.7 percent to an estimated 89.4 percent in 2011. Haveman and Sexton (2008) explain that

[8] Phone interview with Economist Andrew Lockwood, a preparer of the Michigan's Tax Expenditure Report, at Michigan's Office of Revenue and Tax Analysis, February 24, 2011.
[9] *ibid*
[10] Phone interview with Adam Shamy, Ad Valorem Tax Specialist at Florida's Office of Economic and Demographic Research, February 8, 2011.

"Even assessment limits adopted in times of rising house values can contribute to taxpayer discontent as residential prices fall. By breaking the link between market values and assessments, these limits may result in assessed values that rise by a given percentage amount annually, even as owners observe a precipitous drop in their housing wealth." [p. 9]

Table 4
Florida Homestead Properties

Year	Just Value	Assessed Value	Taxable Value*	Assess/Just	Taxable/Just
	(In billions of dollars)				
2004	$ 675	$ 508	$ 398	75.2%	59.0%
2005	$ 822	$ 573	$ 460	69.7%	56.0%
2006	$ 1,067	$ 658	$ 543	61.7%	50.9%
2007	$ 1,166	$ 733	$ 613	62.9%	52.6%
2008	$ 1,082	$ 764	$ 546	70.7%	50.5%
2009	$ 881	$ 709	$ 494	80.4%	56.1%
2010	$ 751	$ 662	$ 453	88.2%	60.3%
2011 est.	$ 726	$ 649	$ 438	89.4%	60.3%

* Next of homestead and other exemptions.
Source: "Background Material," Florida's Revenue Estimating Conference; Ad Valorem Assessments, March 7, 2011, http://edr.state.fl.us/Content/conferences/advalorem/index.cfm

Other Efforts to Estimate

While not many states have formal estimates of foregone property tax revenues as a result of assessment limits, there have been a number of ad hoc efforts to estimate the impact of assessment limits. Haveman and Sexton (2008) review studies that estimate the effect of assessment limits on the tax base. O'Sullivan, Sexton and Sheffrin (1995a) estimate the effects of California's Proposition 13 by comparing assessed values to market values of properties that actually sold in 1992. The study found that the tax base in 1992 was approximately 56 percent of market value – i.e., Proposition 13's 2 percent assessment cap reduced the tax base by 44 percent that year, from $2.9 trillion to $1.6 trillion. Moak and Associates (2004) cites The Texas Association of Property Tax Professionals as estimating that Texas' 10 percent assessment limit reduced the tax base by $1.9 billion in 1998, $14.2 billion in 2002 and $10.9 billion in 2003. Substantial erosion in the tax base has resulted from the passage of Limited Market Value law in Minnesota. The Minnesota Revenue Department (2006) reported a tax base loss of $32.5 billion in 2006 (an 8 percent reduction in the base), even though the assessment cap is considerably higher than California's 2 percent or Florida's 3 percent. Hawkins (2006) finds that the tax base loss due to Florida's Save Our Homes 3 percent assessment limit exceeded $160 billion in 2004, and the author estimates $1.82 billion (or 10.6 percent) in forgone property tax revenue for counties and schools in 2004 (pages 8 – 9). The University of Florida (2007) reports a tax base loss of $398 billion in 2006, more than 17 percent of the market value of all property that year. The report estimates that the difference in tax base translates to nearly $8 billion in foregone tax revenue, assuming a tax rate of 2 percent (page 36).

For Muscogee County, Georgia, Sjoquist and Pandey (2001) estimated the effect of an assessment freeze on residential properties. They compared local assessed values, subject to the cap, with state assessed values, which were supposed to be 40 percent of market value. While only homestead properties are eligible to have their assessments frozen, Sjoquist and Pandey estimated that 95 percent of the difference between the total gross state and local property tax base is accounted for by differences in the residential property tax base. For 1997, they estimated the difference between the state and local residential property tax base was 15.7 percent. [p. 8] The freeze had differential impacts across residential properties depending, in part, on housing turnover rates and the differential growth in housing values. In 1997, 54 percent of parcels in Muscogee County had ratios of local to state assessed values of 80 percent or more. However, nearly a fifth of parcels had a ratio of 60 to 69 percent and almost a seventh of all parcels had a ratio of 50 to 59 percent. Sjoquist and Pandey (2001) claim that for Muscogee County, "it is not feasible to determine whether the reduction in assessment value for homesteaded property has translated into a reduction in the total property tax levy, since we do not know what the property tax rate would have been in the absence of the assessment limitation" (8-9).

While assessment limits might not necessarily reduce property taxes if the jurisdiction raises the property tax rate to compensate for limited growth in assessments, 15 of the 19 states with assessment limits also have property tax rate limits. [Sexton, 2009, p. 127] As a result, others are able to estimate the impact of assessment caps on local government revenues. For example, as a result of the reduction in the property tax base, the Minnesota Revenue Department (2006) report found that assessment limits reduced the tax liability for 32 percent of homeowners, but increased tax liability for 68 percent of homeowners (Lyons 2007). Hawkins (2006) determined that school and county property tax revenues in Florida in 2004 were $1.82 billion, or 10.2 percent, lower than they would have been without the assessment cap. Furthermore, Dye et al (2006a) and (2006b) estimate shifts in the tax burden from Cook County's 7 percent assessment limit: In 2003, eligible homestead properties paid $128 million less in property taxes, shifting the burden to ineligible residential properties that paid $30 million more, apartments that paid $14 million more, and commercial properties that paid $60 million more in property taxes.

The University of Florida (2007) report theorizes that the impact of the "Save Our Homes" amendment on local property tax revenues depends on: "the size of the gap between the rate of appreciation and any binding assessment cap; the percentage of properties that are homesteaded in a community; the frequency of sales "turnover" in the taxing jurisdiction; new construction activity; and the millage rate which is unconstrained by the amendment" (page 18). The larger the difference between market value and assessed value, the larger the homestead benefits from the assessment limit. Communities with constrained homesteads miss out on tax dollars whereas a community with homesteads appreciating less than the cap do not. The amendment will likely affect local property tax revenues of communities with more homesteads than those with fewer homesteads. Because of the acquisition value feature, buyers of new construction pay property taxes on the market value of the homestead. New construction would counteract the impact of assessment limits on the city or county's property tax revenue. The amendment will affect local revenue less if the local entity increases the millage rate. The study finds that the counties most likely to experience a reduction in property tax revenue due to the amendment are high value,

higher income suburban counties and high growth, high appreciation coastal counties. The effect of Save Our Homes amendment on assessed homestead values does not benefit senior owners more than others. As market values increase, assessed values on homestead properties increase at a decreased rate due to the Save Our Homes assessment limitation (University of Florida 2007, 26 – 27, 36).

Haveman and Sexton (2008) explain that a low assessment limit coupled with a tax rate limit does not ensure the distribution of the tax base will remain unchanged because of the acquisition value feature. The assessment limit remains until the property changes ownership. Since residential properties exchange ownership more often than businesses, the acquisition value system shifts the burden towards residential property (page 22). Brunori (2010) points out that a change in ownership of corporate property can transpire through a merger or acquisition of stock, which is not tracked as a sale of individual parcels of real estate by the government and thus, property is never reassessed to catch up with market values (Brunori 2010, 525)

Estimating Consequences of Assessment Limits

The purpose of this section is to present a framework to analyze the consequences of assessment limits for selected jurisdictions that do not currently produce tax expenditure budgets for property taxes. The first issue to address in a tax expenditure budget for property taxes is to estimate the revenues foregone because of a tax relief mechanism, in this case assessment limits. This is a straight forward exercise based on the difference between estimated market value and assessed value for tax purposes under the assessment limit. But a tax expenditure budget treats these revenues foregone as expenditures so a number of other consequences need to be identified and discussed. For example, in the case of assessment limits, there is an issue of their impact on the uniformity, and fairness, of the property tax. Standard metrics to evaluate the uniformity and fairness of the property tax can be employed to analyze the impact of assessment limits on uniformity and fairness.

In addition, there may be distributional consequences that follow from a particular tax relief mechanism. For example, to the extent the data allows, one might estimate the shift in property tax burden from those that benefit from the assessment cap to those that do not. This should be done on an equal yield basis of comparing the distribution of tax liabilities across properties using market values and then again using values limited by the assessment cap.

After canvassing states with assessment limits, New Mexico was selected as the demonstration state for this exercise. The New Mexico state legislature enacted the "Limitation on increases in valuation of residential property" law in 2001. Since 2001, the increase in an individual residential property value has been limited to 3 percent from one year to the next for taxation purposes. The cap applies to all residential property, including property in which the owner does not reside.

The assessment limit in New Mexico does not apply to:

- A residential property in the first tax year that it is valued for property tax purposes;

- ❖ Any physical improvements, except for solar energy systems, made to the property during the year immediately prior to the tax year or omitted in a prior tax year; or
- ❖ Valuation of a residential property in any tax year in which:
  - (a) a change of ownership of the property occurred in the year immediately prior to the tax year for which the value of the property for property taxation is being determined; or
  - (b) the use or zoning of the property has changed in the year prior to the tax year. (Property Tax Code 7-36-21.2).

When a change in ownership of the property takes place in the year prior to the tax year for which the value of the property is being determined for property tax purposes, the value of the property shall be its current and correct value. In other words, the property's value resets to market value if the property is sold. (Property Tax Code 7-36-21.2).

New Mexico's assessment limit applies to all residential property. In New Mexico, mobile homes are considered residential property. Mobile homes in mobile home parks are considered to be permanently attached to the ground and are treated as improved real property. Alternatively, mobile homes not in a mobile home park and not permanently attached to the ground are considered personal property. Most often, the value of a mobile home treated as personal property is determined on the cost basis using Marshall & Swift cost factors and then depreciated. As a result, most such mobile homes are not affected by the cap.[11] For example, in 2011 San Juan County had 10,849 mobile homes not permanently attached to the ground treated as personal property. The difference between estimated market value and limited value for each mobile home was calculated by the local assessor. The difference between estimated market and limited value for all 10,849 mobile homes in San Juan County treated as personal property was less than one percent. Out of more than 7,000 residential properties in Los Alamos County, the number of mobile homes impacted by the cap was not more than a couple of dozen. The focus of the empirical analysis below is on improved residential real estate.

The 3 percent cap has generated a lot of public debate. The popular name for the cap is "tax lightening." As a moderator of New Mexico's city data forum explains, "(t)he 'lightning' strikes when the home is sold, and the new owner finds the property is suddenly valued at the market, rather than capped, rate."[12] Local newspaper articles discuss challenges to the constitutionality of the law. One article reports that district judges ruled the law unconstitutional because the law creates classes of people who are taxed differently based on when they bought their homes while the state Constitution only permits the Legislature to "limit increases based on age, income or whether the property is occupied by its owner" (van Buren 2010; McKay 2010). District judges have ruled in favor of the plaintiffs in three cases, but these rulings only apply in Bernalillo County. As of 2010 at least 225 lawsuits had been filed against Bernalillo County (van Buren 2010; McKay 2010; ABQ Journal Editors, 2011).

In response, Bernalillo County Assessor, Karen Montoya, announced in 2010 that for homes sold after 2001, she planned to roll back property values to 2001 and then apply the 3 percent limit on

[11] E-mail correspondence from Jimmy Voita, Chief Deputy Assessor, San Juan County, May 20, 2011.
[12] City-Data Forum New Mexico (2011)

increases for each year after the property sold. Bernalillo County is the largest county in the state. Based on this idea, Senators Tim Eichenberg, D-Albuquerque, Steven Neville, R-Astec, and Mark Boitano, R-Albuquerque introduced SB108 that would roll back property values to 2004, and then add a 3 percent year increase through 2011. As of March 2011, this had passed the Senate and was in the House (ABQ Journal Editorial Staff, 2011; van Buren 2010).

The Taos County Chief Appraiser, Gerald Nichols and the Taos County Assessor, Darlene Vigil, prefered a policy response of yield control rather than the roll back. Yield control would allow the county to adjust the tax rates up or down to allow the county to collect stable streams of revenue. Vigil argued the rollback would be harmful to Taos schools. Nichols wrote a report to compare the roll back policy alternative to eliminating the cap and adding yield control in Taos County. Nichols' report showed that rolling back values of properties sold between 2001 and 2009, and adding a 3 percent increase from year 2000 until 2009, would result in a loss of $391 million from the residential tax base, which would result in raising tax mills from 5.4 mills to 9 mills in Taos County. Nichols reported that reappraising residential properties to current market values would increase the tax base by $461 million and lower the tax rate for 2010 to from 5.4 mills to 3.4 mills, resulting in the same amount of revenue. Nichols argued that reappraisal to current value and lowering the tax rate would have a very small impact on property owners' tax liability (van Buren 2010)

Many states do not have the data need to estimate the consequences of assessment limits. As states improve their databases, they should maintaining estimated market values for each property, limited values, and net assessed values including all exemptions. If the state cannot collect these data from all counties, the state can maintain a list of what data each county collects. States that only have a few counties that collect these data can begin estimating the consequences of assessment limits in tax expenditure reports for only these counties. The Chief of the Appraisal Bureau at New Mexico's Taxation and Revenue Department suggested specific counties in New Mexico that would have the data capabilities necessary for this study. Two counties in New Mexico provided data for this study, San Juan County and Los Alamos County.

To analyze the impact of the assessment limit on property taxes in New Mexico case studies in Los Alamos and San Juan counties were conducted. Both counties include two values for each improved residential parcel – an estimate of market value and the limited value resulting from the assessment cap. If a property is not affected by the assessment cap the estimated market value and the limited value are the same.

Case Study: Los Alamos County

Los Alamos County, NM has a unique history. In 1943, the federal government established exclusive jurisdiction over the area of Los Alamos for the purpose of studying atomic energy. The Los Alamos National Laboratory was founded as part of the Manhattan Project. The federal government returned the land to New Mexico in 1949 and the state legislature created Los Alamos County.[13]

[13] Los Alamos County (2011); BBC H2G2 (2001); USGenWeb Project (2011)

The smallest county in New Mexico, Los Alamos has 109 square miles with a population of 17,950 in 2010.[14] Most residents live in the town of Los Alamos or a slightly smaller community, White Rock. The population is predominately white (87.8 percent). As of 2010, the county has 8,354 housing units, 92 percent of which are occupied (7,667). Los Alamos County has experienced some population decline since 2000 (-2.1 percent).[15]

The largest employer in Los Alamos County is the National Laboratory with an annual budget of $2.2 billion mainly funded by the U.S Department of Energy, with 9,000 employees and 650 contractors.[16] Once shrouded in secrecy, the Lab has been open to the public since 1966 when it was published on the National Register of Historic Places. The level of educational attainment in Los Alamos County far exceeds the statewide average. In Los Alamos County, 98.8 percent of the population 25 years and older have a high school degree or higher, 63.4 percent have a bachelor's degree or higher, and 37 percent have a graduate or professional degree. In New Mexico, 82.1 percent of the population 25 years and older have a high school degree or higher, 25.1 percent have bachelor's degree, and 10.6 percent have a graduate or professional degree.[17]

Forbes magazine deemed Los Alamos County one of the 10 richest counties in the U.S., the only county on the list not on the east coast.[18] The median household income is $100,423 compared to the national median of $51,425. The poverty rate of Los Alamos County is 3.2 percent compared to New Mexico's poverty rate of 18.1 percent.[19]

The U.S Chamber of Commerce recognized Los Alamos County as the most sustainable small community in 2009, with a free bus service, green buildings, and renewable energy among other environmentally friendly efforts.[20]

Empirical Analysis

Los Alamos provided two sets of data for all years 2001-2011 except 2002: the tax roll and a report on the difference in valuation due to the cap. The tax roll for each year is created in October, the notice of values (NOV) is sent out by April 1, and the final tax roll values are finalized in November after appeals. Los Alamos provided the final tax roll for all years since 2001 except 2011, for which we have April NOV values. The second data file, called difference reports, provided by Los Alamos for each year except 2002 includes only residential properties affected by the cap. The difference reports provide estimated market values as well as the limited values of the properties subject to the 3 percent cap. These difference reports are run before April 1. The difference reports and the tax rolls were merged for each year 2001-2011, except for 2002. Appendix B details how the merge was done.

[14] U.S. Census Bureau (2011)
[15] U.S. Census Bureau American Factfinder (2010); U.S. Census Bureau. 2005-2009 American Community Survey 5 year Estimates, Table S1501. Educational Attainment; Los Alamos County (2011)
[16] Los Alamos National Laboratory (2010-2011)
[17] U.S. Census Bureau American Factfinder (2010); U.S. Census Bureau. 2005-2009 American Community Survey 5 year Estimates Table S1701. Poverty Status in the Last 12 Months
[18] Vardi, Nathan (2011)
[19] U.S. Census Bureau. 2005-2009 American Community Survey 5 year Estimates
[20] U.S. Chamber of Commerce (2009)

The merged file includes the following variables: the unique identifier for each property; the area id, which indicates if a property is residential or commercial; the account type which indicates if the property is a mobile home, single family home, condos, or townhouses; the mill levy for that year, the estimated market value, limited value, and net assessed value for each year.

The property values in the raw data files were separated into land and building values. We combined these values into total property values. To estimate foregone revenue and analyze how the cap is affecting the tax base, we need the estimated market value and the limited value for each property. The estimated market value is an estimate of fair market value before any exemptions or adjustments. The limited value is the value limited to a 3 percent increase from the previous year's value. The limited value differs from the estimated market value only when the property's value increases by more than 3 percent from one year to the next. The estimated market and limited values are equal for properties not affected by the cap. The data sets also include a net assessed value for each property that incorporates the cap and other exemptions and adjustments.

Some properties were deleted from the data set prior to analysis. This study focuses on residential property, so only properties with an "areaid" that indicates residential (1R or 2R) were considered in this analysis. Since this study focuses on real property, mobile homes and the land on which mobile homes reside were deleted (account types "mobile home" and "land res mh"). In addition, properties with a zero land value and/or building value were deleted. Mostly, the latter deleted properties with account type "condo_common" in recent years. Deleting zero values also rid the data of a few properties with data errors (account types include vacant residence, single family home, and townhouse). One property in 2007 was deleted as a data error because it was categorized as a non-residential property yet the cap applied to it. The appendix details the data deletions. Properties with a higher limited value than estimated market value were deleted.[21]

Table 5 shows the number of residential properties by type of property for three years. Mobile parks are considered real property because the mobile homes are attached to the land. The majority of residential properties are single-family homes.

[21] The Chief Deputy Assessor at Los Alamos explained why properties may have a higher limited value than market value in email correspondence on July 5, 2011. Since the data come from two data sets, one before appeals and one after appeals, these properties likely had an appeal. The market values for these properties were generated at the time of notice of value (March or April) in the report on the difference. The limited values used for this analysis came from the tax roll generated in November. The limited values of these properties in the report (March or April) differed from the limited values in the tax roll, which were generated after appeals in November. The limited value in the tax roll is correct, not the limited value in the report. A new market value after the appeal was not generated. Therefore these properties are not included in the analysis.

Table 5: Improved Residential Properties, Los Alamos County, New Mexico

Property Type	2001	2003	2004	2005	2006	2007	2008	2009	2010	2011
Single Family	4,668	4,947	5,031	5,105	5,145	5,192	5,209	5,210	5,212	5,219
Townhouse	1,370	1,475	1,517	1,537	1,562	1,364	1,370	881	882	880
Condo	75	81	106	173	180	384	392	757	757	758
Duplex	0	0	0	0	0	0	0	112	112	112
Apartment	3	37	37	36	36	34	33	31	31	31
Xplex	0	0	0	0	0	0	0	16	16	16
Bed & Breakfast	1	1	1	1	6	5	6	6	6	6
Mobile Park	2	2	2	2	2	2	2	2	2	2
Building Residential	34	0	0	0	0	0	0	0	0	0
TOTAL Parcels	6,153	6,543	6,694	6,854	6,931	6,981	7,012	7,015	7,018	7,024
Affected by Cap	5,137	5,664	5,971	6,190	5,830	5,570	3,870	2,871	1,926	1,964
Pct Affected by Cap	83.49%	86.57%	89.20%	90.31%	84.11%	79.79%	55.19%	40.93%	27.44%	27.96%

Impact of the Assessment Cap on the Property Tax Base and Revenue

In order to estimate the foregone revenue, we calculated the fractional assessment of the estimated market values and the limited values. In New Mexico, the fractional assessment is 33.3333…%. For this study, we divided both estimated market values and limited values by 3. Estimated market values divided by 3 will be referred to as taxable estimated market values, and limited values divided by 3 will be referred to as taxable limited values. These are gross assessed values, meaning they do not reflect any exemptions. Net assessed values include exemptions. Using net assessed values to calculate the difference in taxation due to the cap would be misleading, as some difference would be due to exemptions and adjustments rather than solely the cap (Sjoquist and Pandey 2001, 8-9). The difference between taxable estimated market values and taxable limited values is solely due to the cap.

The taxable estimated market values represent the counterfactual to the cap: the taxable value if the cap were not in place. The limited values represent the taxable value with the cap in place. Holding all else constant in this comparison is standard practice in tax expenditure reports (e.g. Florida 2010, Michigan 2009, Minnesota 2010, Kentucky 2010). Certain exemptions or other tax relief mechanism would possibly change if the cap were repealed. The estimation of foregone revenue does not estimate tax revenue if the cap were repealed. It estimates the amount of revenue limited by the cap under current policies and circumstances.

Table 6 shows estimates of foregone revenue due to the cap for all years since the cap went into place, except for 2002. The financial impact of the cap in Los Alamos County decreases over the years as reflected in Table 6 in the percent reduction, which show how much the cap has decreased the residential tax base. As Haveman and Sexton (2008) explain, the gap between the limited and market value "will grow overtime if appreciation continues to outpace the annual assessment limit" (page 26). If appreciate does not outpace the assessment limit, the gap will not increase. The gap can also decrease if the rate of property turnover increases because properties reset to market value upon sale (Haveman and Sexton 2008).

The likely explanation for the decrease in the gap is the slowing of appreciation in the real estate market. Sales do not show a drastic increase in the years that the number of parcels affected by

the cap (and percent reduction of the tax base due to the cap) declines: 2001 (312); 2002 (404); 2003 (444); 2005 (490); 2006 (498); 2007 (383); 2008 (373); 2009 (458); 2010 (551); 2011 (151). The numbers in parentheses reflect the number of residential properties sold in the corresponding year. If the explanation of property turnover explained the decline in percent reduction due to the cap in Table 6, 2008 would show a drastic increase in property turnover from 2007, and it does not. The cap does not reduce the tax base if property values do not appreciate higher than the cap.

Table 6: Impact of Assessment Limit on Improved Residential Real Property Tax Base in Los Alamos County (in millions)

Year	Taxable Estimated Market Value	Taxable Limited Value	Reduction in taxable value due to cap	Percent reduction due to cap	Mill levy	Foregone revenue
2001	489.24	397.77	91.46	18.7%	0.019351	1.77
2003	552.23	475.61	76.62	13.9%	0.01811	1.39
2004	620.95	523.41	97.54	15.7%	0.016883	1.65
2005	675.18	563.87	111.30	16.5%	0.016788	1.87
2006	695.81	596.40	99.41	14.3%	0.016917	1.68
2007	731.09	628.91	102.18	14.0%	0.01649	1.69
2008	702.62	637.34	65.29	9.3%	0.016895	1.10
2009	656.03	620.95	35.09	5.3%	0.023036	0.81
2010	621.63	602.33	19.30	3.1%	0.021636	0.42
2011	630.19	612.67	17.52	2.8%	0.021636*	0.38

*The mill levy used for 2011 estimates is actually the mill levy for 2010. The mill levy for 2011 was not yet calculated at the time of this report.

From 2008 to 2009, the mill levy jumped from 16.895 to 23. This increase in millage was because of a successful General Obligation bond for the Los Alamos schools. In 2010, the county reduced property tax revenue by $1,500,000 to compensate for the increase in mill levy, resulting in a decrease in the total tax rate in 2010.[22]

To place foregone revenue in perspective, the total revenue raised from residential property taxes in 2010 was $12,882,388. In 2010, Los Alamos County, the municipality, the school districts, and community colleges experienced foregone revenues of $420,000, which amounts to 3.3 percent of total revenue raised.[23]

A tax expenditure report could conclude analysis with the estimate of foregone revenue. For a fuller understanding of the impact of the cap, however, the impact on uniformity of the property tax can be analyzed.

Impact of Assessment Cap on Uniformity

[22] Email correspondence from the Chief Deputy Assessor at Los Alamos on July 5, 2011

[23] The Chief Deputy Assessor of Los Alamos County provided the amount of revenue raised from residential property taxes in 2010, including mobile homes, in a telephone conversation on July 25, 2011. The authors calculations of foregone revenue excluded mobile homes.

Limits such as New Mexico's cap are criticized for their impact on horizontal uniformity. Since the cap on a home is removed upon sale, two homes can have equal fair market values, but one owned since 2000 pays lower taxes than the other identical home purchased in 2011. The property with the same owner since 2000 will be valued less for tax purposes than a home of equal value purchased in 2011 because of the assessment cap.

The coefficient of dispersion is a measure of horizontal uniformity and is reported in Table 7. In earlier years uniformity of the administration of the property tax was undermined by the assessment cap resulting in relatively high CDs. In more recent years uniformity has been restored to a large extent because fewer homes are subject to the cap due to the real estate downturn.

Table 7: Impact of Assessment Limit on Uniformity of Assessments in Los Alamos County

Year	CD	PRD	No. of Properties	Median limited-market value ratio
2001	24.7%	1.01	6153	0.79
2003	16.8%	1.01	6543	0.86
2004	19.6%	1.01	6694	0.84
2005	20.2%	1.01	6854	0.84
2006	17.3%	1.01	6931	0.87
2007	16.1%	1.00	6981	0.88
2008	10.1%	1.01	7012	0.97
2009	5.7%	1.00	7015	1.00
2010	3.1%	1.00	7018	1.00
2011	2.7%	1.00	7024	1.00

The Price Related Differential measures vertical uniformity. For all years, the PRD is close to 1, suggesting that lower valued properties and higher valued properties are equally impacted by the assessment cap.

Distributional Consequences of Assessment Cap

Residential properties that do not increase more than 3 percent per year do not benefit from the cap. If the local government raises the tax rate in order to collect the same revenue they otherwise would without the cap, then some properties limited by the cap may still pay higher taxes than they otherwise would (Haveman and Sexton 2008).

The distributional consequences of the cap under conditions of a changing tax rate to meet a revenue target are analyzed. We utilize the current estimated revenue as the target revenue. Since the 2011 mill levy is not calculated until September of 2011, we use the mill levy from 2010. We multiply the 2010 tax rate by the 2011 net assessed value (the assessed value after all exemptions) to calculate estimated property tax liabilities as well as the individual tax liability for each property.

To isolate the impact of the cap on the distribution of property tax liabilities, we conduct an equal yield analysis. We assumed that the same amount of revenue would be collected under two conditions: 1) the market value divided by 3 is the base, 2) the value limited by the 3 percent cap divided by 3 is the tax base.

In 2011, applying the actual 2010 millage rate (21.636) to the total net assessed value (values with all exemptions) results in an estimated residential property tax liability of $13,068,594.[24] To generate the same amount of revenue when the total estimated market value divided by 3 is used as the tax base, the tax rate would be 20.737 mills instead of 21.636 mills. To generate the same property tax revenue using the limited value divided by 3 for each property would require a tax rate of 21.33 mills instead of 21.636 mills.

According to the data in Table 8.1, 1,489 properties benefited from the cap in 2011. A property is considered to benefit from the assessment cap if its tax liability when the base of the property tax is limited value is lower than it would be when the tax base is estimated market value. Of the total number of beneficiaries, 70 percent of the beneficiaries are single-family homes, 14 percent townhouses, and 12 percent are condos. Of all single-family homes, 20 percent of the single-family homes are beneficiaries, 23 percent of townhouses are beneficiaries, and 24 percent of condos are beneficiaries. Apartments are the property type with the highest percentage of beneficiaries: 70 percent of apartments are beneficiaries under the cap, meaning they have less tax liability under the tax rate associated with the limited values as the base than they would if the tax rate was associated with the estimated market values as the base.

Table 8.1: 2011 Beneficiaries of the Cap, Los Alamos County

	No. Beneficiaries	Percent of Beneficiaries	No. Property type	Percent of Property Type
Single Family	1050	70.5%	5219	20.1%
Townhouse/townhome	208	14.0%	880	23.6%
Condo	182	12.2%	758	24.0%
Duplex	22	1.5%	112	19.6%
Apartment	22	1.5%	31	71.0%
Xplex	4	0.3%	16	25.0%
Bed & Breakfast	1	0.1%	6	16.7%
Mobile Park	0	0.0%	2	0.0%
Total Parcels	1489	100.0%	7024	21.2%

[24] The authors calculated $13 million in tax liability in 2011 using the tax rate for 2010 and the raw data for 2011 provided by Los Alamos County. This amount differs from estimated property tax collections published in Los Alamos County's budget FY2011 ($5 million) because Los Alamos' estimate represents the amount of property tax revenue the county receives. The mill levy of 21.636 includes mills applied by county, school districts, municipalities, and community colleges. The mill levy that the county charged was 6.195 of the 21.636 total mill levy. The Los Alamos budget also includes mobile home in their estimate (Los Alamos County Reports and Budget 2011, page 56; telephone conversation with the Chief Deputy Assessor at Los Alamos on July 25, 2011.

In 2007, applying the millage rate to the total net assessed value results in total property tax liability of $10,239,491. To generate the same amount of revenue when the total estimated market value (divided by 3) is used as the tax base, the tax rate would be 14.006 mills instead of 16.49 mills. To generate the same property tax revenue using the limited value (divided by 3) for each property would require a tax rate of 16.28 mills instead of 16.49.

Table 8.2 2007 Beneficiaries of the Cap, Los Alamos County

Property Type	No. Beneficiaries	Percent of Beneficiaries	No. Property type	Percent of Property Type
Single Family	2485	76.6%	5192	47.9%
Townhouse/townhome	604	18.6%	1364	44.3%
Condo	128	3.9%	384	33.3%
Duplex	0	0.0%	0	0.0%
Apartment	26	0.8%	34	76.5%
Xplex	0	0.0%	0	0.0%
Bed & Breakfast	1	0.0%	5	20.0%
Mobile Park	0	0.0%	2	0.0%
Total Parcels	3244	100.0%	6981	46.5%

According to the data in Table 8.2, 3,244 properties benefited from the cap in 2007. A property is considered to benefit from the assessment cap if its tax liability when the base of the property tax is limited value is lower than it would be when the tax base is estimated market value. Of the total number of beneficiaries, 77 percent of the beneficiaries are single-family homes, 19 percent townhouses, and 4 percent are condos. Of all single-family homes, 48 percent of the single-family homes are beneficiaries, 44 percent of townhouses are beneficiaries, and 33 percent of condos are beneficiaries. Apartments are the property type with the highest percentage of beneficiaries: 77 percent of apartments are beneficiaries under the cap, meaning they have less tax liability under the tax rate associated with the limited values as the base than they would if the tax rate was associated with the estimated market values as the base.

We also show the distributional consequences of the cap according to the properties' estimated market values. Twenty percent of the properties are placed into each of 5 quantiles according to their estimated market value. In Table 9.1 we analyze the frequency of properties capped as well as properties benefiting according to the equal yield analysis from the cap for years 2011 and 2007.

Table 9.1 Capped and Benefiting Residential Properties by Quantile, Los Alamos County 2011

Quantiles	2011 Bins of Estimated Market Value	No. Properties	No. Properties Capped	Percent Capped in each bin	No. Beneficiaries	Percent Beneficiaries	Percent Beneficiaries in each bin
1	0 - $163,770	1405	475	33.8%	407	27.3%	29.0%
2	$163,771 - $213,200	1405	437	31.1%	296	19.9%	21.1%
3	$213,201- $266,400	1405	379	27.0%	285	19.1%	20.3%
4	$266,401-$350,590	1405	329	23.4%	229	15.4%	16.3%
5	$350,591- $11,025,450	1404	344	24.5%	272	18.3%	19.4%
Total		7024	1964	28.0%	1489	100.0%	21.2%

There are 1,405 properties in each bin (except 1,404 in the fifth bin). The number of capped properties in each bin ranges from 329 to 475. If the data were perfectly uniform, one would expect 392 capped properties (28 percent) in each bin. The column "percent capped in each bin" is the percentage of "No. properties capped" divided by "No. properties." The bin with the lowest valued properties has the highest percentage of capped properties: 34 percent. The second to highest valued bin has the lowest percentage of capped properties: 23 percent. Properties with lower estimated market values are more likely to be capped than higher valued properties.

Properties with lower values are more likely to be beneficiaries than properties with higher values. The number of beneficiaries in each bin ranges from 229 in the second to highest valued bin to 407 properties in the lowest valued bin. The column of "percent beneficiaries" divides the number of beneficiaries in the bin by the total number of beneficiaries, so 27 percent of the beneficiaries are in the lowest valued quantile. If perfectly uniform, the percentage for each bin would be the same. The column with "percent beneficiaries in each bin" shows that of all properties in the lowest valued bin, 29 percent are beneficiaries.

Table 9.2 Capped and Benefiting Residential Properties by Quantile, Los Alamos County 2007

Quantiles	2007 Bins of Estimated Market Value	No. Properties	No. Properties Capped	Percent Capped in each bin	No. Beneficiaries	Percent Beneficiaries	Percent Beneficiaries in each bin
1	0 - $193,420	1397	1040	74.4%	738	22.7%	52.8%
2	$193,421 - $247,760	1396	1029	73.7%	676	20.8%	48.4%
3	$247,761 - $311,040	1396	1074	76.9%	661	20.4%	47.3%
4	$311,041 - $407,100	1396	1176	84.2%	631	19.5%	45.2%
5	$407,180 - $11,442,940	1396	1251	89.6%	538	16.6%	38.5%
Total		6981	5570	79.8%	3244	100.0%	46.5%

More properties were capped in 2007 than in 2011. In Table 9.2, 74 percent of the lowest valued properties were capped and 90 percent of the highest valued properties were capped. Data from 2007 shows the opposite trend than the data in 2011: the higher valued properties were more likely to be capped than the lower valued properties. The lower-valued properties, however, were more likely to be beneficiaries of the tax rate associated with the cap, assuming the tax rate would change under varying conditions, according to the equal yield analysis.[25]

[25] Dye et al (2006a) and (2006b) also found that the number of properties benefiting from the assessment limit, in terms of having lower property tax liabilities than they would have had otherwise, was lower than the number of properties subject to the assessment limit. In 2011, there were 1,964 properties in Los Alamos County subject to the cap, but only 1,489 that saw their property tax liabilities actually decline as a result of the cap. Similarly, in 2007,

Case Study: San Juan County

San Juan County is in the Northwestern corner of New Mexico. It borders Arizona, Colorado and Utah and is adjacent to the Navajo Nation Reservation and the Jicarilla Indian Reservation. The county is 5,514 square miles with a population of 130,044 in 2010; or 23.6 people per square mile, compared to a state average of 17.0 people per square mile.

The county is primarily a tourist destination for outdoor recreational activities including camping, hunting and fishing, and snow skiing. Farmington is the largest city in the county with a population of 43,573 in 2006 and serves as a regional shopping hub.

Eighty percent of the population is high school graduates, compared to 82 percent for the state as a whole, but only 14.2 percent have a bachelor's degree or higher, compared with 25.1 percent for the state as a whole.

In 2009 there were 45,996 housing units in the county, and a homeownership rate of 75.9 percent, compared with a homeownership rate of just 69.6 percent in the state. There are 39,264 households in the county with a median household income of $46,007 in 2009 and 20.6 percent of the population living below the poverty line, compared with 18.2 percent of people living below the poverty line statewide.[26]

The total net taxable property value for the county was $2,796 million in tax year 2010. This taxable base is composed of residential property (40.4 percent of the taxable base), non-residential property (which is composed of centrally assessed property which is 38.9 percent of the taxable value and other non-residential property which is 20.6 percent of the taxable base) and livestock, which accounts for a negligible part of the taxable base.[27]

The San Juan County Assessor's Office provided data for improved residential properties for the years 2003, 2007 and 2011. The data file for each year contains information for each individual improved residential property – an identifier for the district where the parcel is located, the type of property, the estimated market value, the limited value, which reflects the impact of the assessment cap on that individual property, and the assessed value used for determining the actual property tax liability for each property.

The file for each year includes all developed residential parcels broken down by land use type. The land use types include MH Park, which are mobile homes permanently attached to the ground. The vast majority of mobile homes are not permanently attached to the land and, while they are considered residential properties, they are technically defined as personal property. While legally eligible for the assessment cap, since it applies to residential properties, mobile homes not permanently attached to the land are personal property and treated as a depreciable

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there were 5,570 properties subject to the cap, but only 3.244 saw their property tax liabilities decline as a result of the cap.

[26] US Census Bureau, QuickFacts, San Juan County, New Mexico.

[27] San Juan Amended Abstract, October 7, 2010.

asset which decline in value over time. The focus of this analysis is on real property, so mobile homes not permanently attached to the land are not included here.

Other land use types include Partially Exempt properties, which are those where part of the property is exempt from paying property taxes. The taxable portion of such properties is included in this data file. Residential Mix properties are properties that are part residential and part commercial in nature. While the total value of each such property is included in this file, the difference between estimated market value and limited value is a result of the assessment cap. The category Residential properties include all other residential properties.

The following table provides a breakdown of those data by land use type.

Table 10
Improved Residential Properties, San Juan County, New Mexico

Property Type	2003	2007	2011
MH Park	95	95	95
Multi-family	313	315	315
Partially Exempt	2	2	2
Residential Mix	127	127	127
Residential	20,131	20,130	20,135
TOTAL Parcels	20,668	20,669	20,674
Affected by Cap	1,241	18,431	17,396
Pct Affected by Cap	6.0%	89.2%	84.1%

The total number of parcels varies across years because in 2003 and 2007 there were 6 and 5 parcels, respectively, where the limited value was higher than estimated market value. These were determined to be errors and were omitted.

The cumulative impact of the assessment limit is also illustrated by the data in Table 1. Specifically, in 2003 only 6 percent of the parcels where affected by the cap. By 2007, when real estate prices peaked, nearly 90 percent of the properties where affected by the cap. As the real estate market declined and individual properties sold, the proportion of properties affected by the cap declined to 84 percent by 2011.

The first issue for a tax expenditure budget to address is to determine the extent to which the cap has reduced the property tax base. In addition, because a tax expenditure budget treats relief as an expenditure rather than tax policy, a number of other issues emerge. For example, what is the impact of the assessment limit on local property tax revenues? What is the impact of the assessment limit on uniformity and horizontal and vertical equity? These issues are explored below.

Impact of the Assessment Cap on the Property Tax Base and Revenue

In order to estimate the impact of the assessment limit in New Mexico on the property tax base in San Juan County the difference between the estimated market value and the limited value (the value of a property reflecting the impact of the assessment cap) was calculated for each property in the data set for each year. If an individual property was not affected by the cap because its value increased by less than 3 percent from the previous year, or it was sold in the current year, the two values will be identical and the difference is zero. If the 3 percent cap was in effect for a property, the difference represents the reduction in the value because of the limit. Thus, summing the differences estimates the extent to which the estimated market values are reduced because of the assessment limit. The assessment ratio for residential properties in New Mexico is one-third, so the total reduction in estimated market value because of the limit is divided by three to determine the impact of the cap on assessed value subject to taxation.

Table 11 summarizes the results for each year. The table presents data on the total estimated market value in each year (divided by 3), total limited value (divided by 3), the reduction in estimated market value because of the assessment cap, the percent reduction in assessed value because of the assessment limit, and an estimate of foregone revenue because of the assessment limit.[28]

For example, in 2003, two years after the cap was imposed, the total estimated market value of all improved residential property in San Juan County subject to taxation was $577 million. The taxable limited value, which reflects the effect of the cap on each individual property, was $574 million, resulting in a reduction of the assessed taxable base of $3.6 million, or 6 tenths of one percent, a very modest impact.

Table 11
Impact of Assessment Limit on Improved Residential Real Property Tax Base
(Millions of Dollars)

Year	Taxable Estimated Market Value	Taxable Limited Value	Reduction in Taxable Value Due to the Cap	Percent Reduction in Taxable Value Due to the Cap	Foregone Property Tax Revenues Due to Cap
	(Millions of Dollars)				
2003	577.12	573.52	3.60	0.63%	N.A
2007	854.58	720.51	134.07	18.61%	$1.54
2011	1093.50	852.28	241.22	28.31%	$2.84

[28] Foregone revenue for 2003 is not calculated because of the lack of information on millage rates in effect that year. For 2007 and 2011 millage rates for state debt service, county activities (operational, debt service and water reserve fund) and the San Juan Community College. For 2007 the total was 11.5 mills and for 2011 the total was 11.767 mills. These millage rates do not include millage rates for municipal operations and debt service and school districts.

Each year, however, more properties become subject to the cap and properties subject to the cap are constrained in growth for more than one year. As a result, the cumulative impact of the assessment limit will increase with time. For example, by 2011 total estimated market value subject to taxation increased to $1.09 billion, total limited value subject to taxation increased to $852 million and the cap reduced taxable value by $241 million. The resulting reduction in assessed value was 28.3 percent of the property tax base and resulted in lost property tax revenues of $2.84 million in 2011.

Impact of Assessment Cap on Uniformity

Assessment uniformity reflects the fair and equitable treatment of individual properties. Uniformity results when individual properties are assessed at the same percentage of market value. This ensures that property tax liabilities are distributed across individual properties, and types of properties, in relation to their share of the total value of the tax base. Systematic differences in assessed values relative to market values can lead to both horizontal and vertical inequities. (Eckert, p. 516)

Two measures are used to evaluate the uniformity of assessments. The coefficient of dispersion measures the horizontal uniformity of assessments. Low coefficients of dispersion tend to be associated with good assessment uniformity. (Eckert, p. 534) The price-related differential measures the vertical uniformity of assessments. A price-related differential greater than 1 indicates that high-valued properties are under-valued, while a price-related differential less than 1 indicates that low-valued properties are under-valued. (Eckert, p. 539-40)

These two metrics are used to analyze the impact of the assessment limit in New Mexico on properties in San Juan County. In calculating the ratios to compute these metric, estimated market value is treated as the market value of each property and the limited value is treated as the assessed value reflecting the impact of the assessment cap. Table 12 presents the results from this analysis.

Table 12
Impact of Assessment Limit on Uniformity of Assessments

	Coefficient of Dispersion	Price-Related Differential
2003	0.50%	0.999
2007	9.97%	0.986
2011	19.80%	1.024

In 2003, the coefficient of dispersion is nearly zero reflecting the fact that few properties were subject to the assessment limit so that the estimated market value and the limited value for each property were nearly identical. The price-related differential is nearly 1 indicating vertical

uniformity in the application of the assessment limit across all properties. By 2011, however, the cumulative effects of the assessment limit are starting to show. The coefficient of dispersion has increased to 19.8 percent indicating a systematic reduction in horizontal uniformity as a result of the assessment limit. Similarly, the price-related differential has increased, albeit slightly, indicating a somewhat favorable impact of the limit on higher valued properties.

Distributional Consequences of Assessment Cap

Not all properties benefit from the cap because their value does not increase more than 3 percent per year. In addition, some properties may be affected by the cap, but if the local government has to raise the tax rate to collect the same revenue they too might have to pay higher taxes than they otherwise would.

To analyze the distributional consequences of the cap, total property tax liabilities were estimated by multiplying the actual assessed value of each property by the statutory tax rate. This also calculates the individual tax liability for each property.

To isolate the impact of the cap on the distribution of property tax liabilities across individual properties, an equal yield analysis was conducted assuming that the same amount of property tax revenue would be collected under two different scenarios – first, the tax base would be estimated market (or actual) value and second, the tax base would be estimated by total limited value.

In 2011, applying the millage rates described above to the total assessed value indicates total property tax liabilities for 2011 of $9,798,351. To generate the same amount of revenue when total estimated market value is used as the tax base the tax rate would have to be 8.96 mills, instead of the actual rate of 11.767 mills. Similarly, to generate the same property tax revenue using the limited value for each property would require a tax rate of 11.5 mills, compared to the actual rate 11.767 mills.

These tax rates where then applied to each individual property to determine the tax liability under each scenario. The tax liability for each property when limited value is the base was divided by its tax liability when the estimated market value is the base. A result greater than 1 means the property's tax liability was higher because of the assessment cap and a result less than 1 means the property's tax liability was lower as a result of the cap. Properties with ratios less than 1 are thought to be beneficiaries of the limit. The results of this analysis are presented in Table 13.

Table 13
2011 Beneficiaries of Cap, San Juan County

Property Type	Number	% of Beneficiaries	% of Property Type
MH Park	20	0.2%	21.1%
Multi-family	168	1.5%	53.3%
Partially Exempt	1	0.0%	50.0%
Residential Mix	55	0.5%	43.3%

Residential	11,141	97.9%	55.3%
TOTAL Parcels	11,385	100.0%	55.1%

According to the data in Table 13, in 2011 there were 11,385 properties that benefit from the assessment cap.[29] A property is considered to benefit from the assessment cap if its tax liability when the base of the property tax is limited value is lower than it would be when the tax base is estimated market value. While nearly 98 percent of these properties are residential properties, the impact of the cap varies across land use types. For example, one in five mobile homes located in a mobile home park benefit from the cap. Alternatively, more than half of all multi-family properties benefit from the cap while 55 percent of all other residential properties benefit from the cap.

There does not seem to be any systematic bias in the impact of the cap across high- or low-valued properties. For each property the difference in the tax liability when the tax base is estimated market value and when it is limited value was calculated. The correlation coefficient between estimated market value and the dollar reduction in property tax liability for each property under the limited and estimated market value was -0.247 indicating no strong relationship between the two numbers across all properties. Alternatively, the correlation coefficient between actual value and the ratio of the tax liability when limited value is the base and when estimated market value is the base is 0.148, again indicating no strong relationship.

The results change somewhat when looked at in a different manner. Specifically, if the estimated market value for each property is compared to the limited value for each property there are difference conclusions. These differences are looked at from two perspectives. First, the ratio of limited value to estimated market value was computed. A ratio of 1 means the cap has not impacted that specific property. When this ratio is correlated with the estimated market value of each property the correlation coefficient is -0.117 in 2007 and 0.148 in 2011. Thus, there does not seem to be a systematic relationship between this ratio and the estimated market value of the property.

Alternatively, the difference between the estimated market value and the limited value for each property was computed. If the values are the same, the difference will be zero. When correlating the dollar reduction in value due to the assessment cap and the estimated market value for each property, the correlation coefficient in 2011 was 0.493. This suggests that there is somewhat of a systematic relationship between estimated market and limited value where higher valued properties tend to have higher dollar reductions. In 2007 this correlation coefficient was 0.671 indicating that the relationship is stronger and that the higher the value of a property the higher the dollar reduction in value.

[29] Remember in Table 10 there were 17,396 improved residential properties affected by the cap. Table 13 indicates that only 11,385 of those actually have lower tax liabilities when the limited value is the base relative to what they would pay when estimated market value is the base. That is, some properties have lower assessed values when limited value is the base, but the tax rate is higher in order to raise the same amount of revenue and the rate increases more than the value of their property decreases because of the assessment cap.

A closer look at the vertical uniformity shows that lower valued properties have slightly more capped properties and beneficiaries than higher valued properties. Twenty percent of the properties are placed into each of 5 quantiles according to their estimated market value. There are 4,135 properties in each bin (except 4,134 in the fifth bin). The number of capped properties in each bin ranges from 3,280 to 3,640. If the data were perfectly uniform, one would expect 3,481 capped properties (84 percent) in each bin. The column "percent capped in each bin" is the percentage of "No. properties capped" divided by "No. properties." The second to lowest quantile has the highest percentage of capped properties: 88 percent. The bin with the highest valued properties has the lowest percentage of capped properties: 79 percent.

Table 14: Capped and Benefiting Residential Properties by Quantile, San Juan County 2011

Quantiles	2011 Bins of Estimated Market Value	No. Properties	No. Properties Capped	Percent Capped in each bin	No. Beneficiaries	Percent Beneficiaries	Percent Beneficiaries in each bin
1	0 - $95,643	4,135	3,384	81.8%	2,555	22.4%	61.8%
2	$95,644 - $128,747	4,135	3,640	88.0%	2,378	20.9%	57.5%
3	$128,748 - $158,099	4,135	3,603	87.1%	2,345	20.6%	56.7%
4	$158,100 - $209,054	4,135	3,498	84.6%	2,137	18.8%	51.7%
5	$209,055 - $3,536,828	4,134	3,280	79.3%	1,971	17.3%	47.7%
Total		20,674	17,405	84.2%	11,386	100.0%	55.1%

The number of beneficiaries in each bin ranges from 1,971 in the highest valued bin to 2,555 in the lowest valued bin. Properties with lower values are more likely to be beneficiaries than properties with higher values. The column of "percent beneficiaries" divides the No. of beneficiaries in the bin by the total number of beneficiaries. If uniform, the percentage for each bin would be the same.

Similarly, the same pattern shows in the "Percent benefit in each bin," which divides the number of beneficiaries by the total number of properties in the bin. If perfectly uniform, 55 percent of the properties in each bin would be beneficiaries. There is not much of a range of variation, but there is a slight tendency towards lower valued properties being capped and beneficiaries.

Conclusion

Property tax expenditures can and should be estimated in state tax expenditure reports. Due to the threat to horizontal and vertical equity, the costs of assessment limits need to be estimated. To estimate the foregone revenue of assessment limits, data must be collected on both the assessed and market values and the difference in those values multiplied by the appropriate tax rate. If states are able to calculate the shift in tax burden and loss, the reports will provide more transparency. Presenting tax expenditure estimates by county is particularly important for assessment limits because of the variation by county found in studies of Florida and California.

The impact of the 3 percent cap on San Juan County differed from Los Alamos County in that the cumulative effects of the cap in San Juan increased revenue foregone over the years while the revenue foregone due to the cap decreased over time in Los Alamos.

Disparities in horizontal uniformity increased in San Juan County over time while disparities in horizontal uniformity declined in Los Alamos in recent years. The impact of the cap differs between the two counties because the cap affected much fewer properties in 2011 (28 percent) than 2007 (80 percent) in Los Alamos, whereas the number of properties affected by the cap in San Juan remained above 80 percent from 2007 to 2011 (see tables 1 and 6). The number of properties affected by the cap likely declined in Los Alamos County after 2007 because of a slowing in the appreciation of the real estate market, which does not appear to have occurred in San Juan County. Another reason for the decline in properties affected by the cap could be a sharp increase in the number of homes sold (because the limited value of the home returns to market value upon sale), but as discussed above, this did not occur in Los Alamos County. Ultimately, the impact of the cap depends on housing turnover rates and the differential growth in housing values, as well as how well those values held up during the 2007-2009 recession.

The price related differential showed strong vertical uniformity. A closer analysis of vertical uniformity in both counties in 2011 using quantiles showed a slight tendency towards lower valued properties benefiting from the cap more so than higher valued properties. In 2007, Los Alamos County showed that higher valued properties were more likely to be capped than lower valued properties, however, lower valued properties were more likely to benefit under the equal yield analysis.

A comparison of the findings for Los Alamos County and San Juan County, New Mexico to other locations show that they resemble the impact of a similar assessment limit in Florida on the tax base, but greater than the impact in Minnesota. Variation in the national real estate market and economic trends over time necessitates that the comparison of effects in different locations occurs in the same year. Given that the 3 percent cap went into effect in New Mexico in 2001, the effects on the tax base between 2001 and 2011 cannot be compared to studies conducted on data that precede 2001 (O'Sullivan, Sexton and Sheffrin 1995; Sjoquist and Pandey 2001).

The percent reduction in the tax base in 2007 is similar among San Juan County, Los Alamos County, and the state of Florida. Florida's "Save Our Homes" amendment to the Florida Constitution established an assessment limit of 3 percent on homestead properties (which excludes vacation homes and non-owner occupied residences) in 1992. The 3 percent cap reduced the tax base by 17 percent in 2007 (University of Florida 2007, 21).[30] In 2007, the 3 percent cap on all residential property reduced the tax base in San Juan County by 18.6 percent and the tax base in Los Alamos County by 14 percent. In 2004, counties in Florida collected 10.6 percent less revenue from homestead property taxes due to the cap (Hawkins 2006, 9). In 2004, Los Alamos collected 15.7 percent less revenue from all residential property taxes due to the cap (1.65 million).[31]

[30] Calculated from the conceptual equivalents of taxable limited value and taxable estimated market value on page 21 of the University of Florida report ($644 billion divided by $1.042 trillion).

[31] The Los Alamos calculation was made first calculating the revenue of taxable market value multiplied by the mill levy (620.95 million * .016883) to get 10.4835. Then, the foregone revenue in 2004 (1.65 million) was divided by the revenue that would be collected without the cap 10.4835. These numbers disregard other exemptions.

Minnesota's assessment limit, the Limited Market Value law (LMV), differs from the one in Florida and New Mexico. Passed in 1993, LMV applies to farms, residential property, seasonal recreational residential property, and timberland. These properties are limited to the greater of a 15 percent increase in the previous year's value or 50 percent of the difference between the previous year's value and the current year's estimated market value (Haveman and Sexton 2008, 12). Minnesota's assessment limit had a much smaller impact on the tax base than Los Alamos: LMV reduced the residential tax base by 5.21 percent in 2006, compared to a 14.3 percent reduction in the residential tax base in Los Alamos County (Minnesota Revenue Department 2006, 5). For all property eligible for the cap, Minnesota's tax base reduction increased from 2001 (4.7 percent) to 2003 and 2004 (10.8 percent), then declined to 2005 (9.1 percent) and 2006 (7.9 percent) (Minnesota Revenue Department 2006, i-ii). Los Alamos County had larger tax base reductions due to the cap in all the corresponding years showing a slight drop from 2001 (18.7 percent) to 2003 (13.9 percent), slight increases from 2003 (13.9 percent) to 2005 (16.5 percent), then a slight decrease in 2006 (14.3 percent). The assessment limit in San Juan County reduced the tax base by less than one percent in 2003.

Los Alamos County's cap generated more beneficiaries than Minnesota. In Minnesota, 22 percent of residential homestead properties benefited from the cap by paying less in property taxes than they otherwise would in 2006 (Minnesota Revenue Department 2006, page iv). One year later, 46.5 percent of residential properties in Los Alamos County benefited from the cap. In 2011, the percentage of beneficiaries in Los Alamos County (21.2 percent) resembles Minnesota's 2006 percentage. San Juan County showed a high beneficiary rate of 55 percent in 2011.

Assessment limits are becoming increasing popular in efforts to protect homeowners from rapidly increasing property values. The lower the limit, the greater impact it has on reducing property taxes on those properties increasing most rapidly in value. However, as shown here and in Dye et al (2006), to the extent property tax rates are increased to make up for lost revenues even some properties subject to the cap may experience higher property taxes than they would without the cap. Also, assessment limits clearly undermine the horizontal, and to some extent the vertical, uniformity and fairness of the property tax. As the base is narrowed and taxes increase on those properties not benefiting from assessment limits the property tax could lose its credibility and eventually its legitimacy.

In conclusion, it is critically important for state policy makers to systematically consider the costs of assessment limits, both in foregone revenues for local governments and the distribution of property tax liabilities which could ultimately impact the legitimacy of the tax. In order to accomplish this, states must develop tax expenditure budgets for property tax relief mechanisms. States must track estimated market values, limited values that show only the effect of the cap, and net assessed values. With these values, foregone revenue can be estimated as well as the distributional consequences of the benefits can be analyzed by property type as well as property wealth.

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Appendix A

This appendix provides the estimated foregone revenue for individual tax expenditures included in the column totals in Table 1. Only estimates that exclusively calculate foregone revenue of real property are included. Estimates that include both real and personal property are excluded. Though some state Tax Expenditure reports include TIFs as tax expenditures, this report does not. For TIFs, taxes are earmarked for certain expenditure rather than going into the general fund. Here, items are considered tax expenditures only when revenue is actually foregone. All numbers listed are in millions.

Florida

Source: *2010 Florida Tax Handbook Including Fiscal Impact of Potential Changes*, FY2010-2011, Office of Economic and Demographic Research, pp 177 – 187
http://edr.state.fl.us/Content/revenues/reports/tax-handbook/taxhandbook2010.pdf

Exempt homestead	
$25,000 Homestead Exemption	1,904.60
$25,000 Homestead Exemption above $50,000 in value	903.1
Exempt Other	
Widows' and Widowers exemption (s. 196.202)	3.7
Property used by hospitals, nursing homes and homes for special	108.3
Property used by nonprofit homes for the aged (s. 196.1975)	22.1
Educational property (s. 196.198)	185
Labor organizations (s. 196.1985)	1.6
Community centers (s. 196.1986)	47.1
Institutional exempt property	901
Totally exempt & immune	6,612.70
Federal property	420.6
State property	506.1
Local government property	1,579.50
Not-for-profit sewer and water company (s. 196.2001)	23.1
Working Waterfront (applies in 2010)	46.9
Assessment Limit	
Homestead assessment limitation (Save Our Homes)	2,370.10
Nonresidential assessment limitation (s.193.1555)	48.6
Nonhomestead residential assessment limitation (s. 193.1554)	57.2
Credit Refund	
Permanently and totally disabled veterans (s. 196.081)	67.8
Disabled veterans confined to wheelchairs (s. 196.091)	0.7
Totally and permanently disabled persons (s. 196.101) (Note 1)	10.7

Blind (s. 196.202)	0.1
$500 Totally and permanently disabled persons (s. 196.202) (Note 1)	0.6
$5,000 Disabled, Ex-Servicemen Exemption (s. 196.24)	7.8
Living Quarters for Parents or Grandparents (s. 193.703)	0.6
Local Option Additional Homestead for 65 and older (s. 196.075)	54.9
Agricultural/Forest	
Agricultural land (s. 193.461(6)(a))	992
Business Incentive	
Local Option Economic Development (s. 196.1995) (Note 5) (Note 6)	6.3
Other	
Conservation easement, environmentally endangered lands	1.6
Government leaseholds	16.5
Conservation lands (s.196.26)	24.8

Kansas

Source: *Tax Expenditure Report, Calendar Year 2009*, Kansas Department of Revenue, page 24 http://www.ksrevenue.org/pdf/taxexpreport.pdf -xml=http://search.ksrevenue.org/texis/search/pdfhi.txt?query=tax+expenditure+report&pr=KSRevenue&prox=page&rorder=500&rprox=500&rdfreq=500&rwfreq=500&rlead=500&rdepth=0&sufs=0&order=r&cq=&id=4d2d6ddc19

Credit/Refund	
Selective Assistance for Effective Senior Relief (Safe Senior)	1.23
Homestead Refund Program	42.87

Kentucky

Source: *Tax Expenditure Analysis, Fiscal Years 2010-2012*, FY2010, Governor's Office of Economic Analysis, October 15, 2010, pp 17, 111 – 116 http://osbd.ky.gov/nr/rdonlyres/dbc47eb8-fe21-4429-a283-7357388bf39b/0/1012tea_taxexpendituredoc.pdf

Exempt Other	
Property of Local Governments in Neighboring States	0.02
Agriculture	
Agricultural and Horticultural Land Assessment Protection	0.1
Business Incentive	
Intrastate Railroads and Railway Companies	0.022

Other

State Real Property Tax Yearly Revenue Ceiling	396.9
Environmental Remediation Property	0.002
Leasehold Interest in Buildings Financed with Industrial Revenue Bonds	2.3

Maine

Source: *Maine State Tax Expenditure Report 2010-2011*, FY2010, Department of Administrative and Financial Services, Maine Revenue Services, Economic Research Division, January 15, 2009, pp 37, 39, 44-46
http://www.maine.gov/revenue/research/tax_expenditure_report_09.pdf

Credit/Refund

Maine residents property tax program	48

Business Incentive

Reimbursement for taxes paid on certain business property (BETR)	65.7

Other

Credit for rehabilitation of historic properties	2.3
Pine Tree Development Zone tax credit	0.5

Maryland

Source: *Tax Expenditures Report: Fiscal Year 2010*, FY 2010, Office of Budget Analysis, January 21, 2010, pp 79 – 81
http://www.dbm.maryland.gov/agencies/operbudget/Documents/2010TaxExpendReport.pdf

Exempt Other

Nonprofit cemetery and mausoleum property	0.2
Educational uses	3.8
Nonprofit hospitals and health facilities	4.7
Lodges, trade and civic associations, clubs, and other nonprofit organizations	2
Youth Camps	1.1
Religious organizations	9.3
Volunteer fire companies	0.4
Historical societies and war memorials	0.3
Housing authorities	2
Veterans' organizations	0.1
Miscellaneous property tax exemptions	0.4
Local Government Property	34.4
State Government Property	14.8
Federal Government Property	12.9

Assessment Limit

Homestead tax credit for properties with large assessment increases	78.9
Credit/Refund	
Nonprofit housing for the elderly	0.5
Disabled veterans and surviving spouse	1.6
Renters property tax relief	2.3
Homeowner's property tax credit	53.4

Michigan

Source: *Executive Budget Appendix on Tax Credits, Deductions, and Exemptions: Fiscal Year 2010*, FY2010, Department of Treasury, pp 1 – 7; 84 – 102
http://www.michigan.gov/documents/treasury/ExecBudgAppenTaxCreditsDedExemptsFY10_302899_7.pdf

Homestead Exemption	
Homestead Exemption for Farm Property	150
Homestead Exemption	3520
Exempt Other	
Poverty Exemption	7
Tax Exempt Property	1.542
Local Government Property	221
State Government Property	169
Federal Government Property	158
Education	428
Assessment Limitation	
Taxable Value Cap	3400
Credit/Refund	
Railroad right of way	26.5
Broadband Investment Credit	22.5
Business Incentive	
Enterprise Zone Credit	0.9
Industrial Facilities Development	256
Neighborhood Enterprise Zones	19.5
Obsolete Property Rehabilitation	4.8
Renaissance Zones	82.5

Minnesota

Tax Expenditure Budget Fiscal Years 2010-2013 Minnesota Department of Revenue, Tax Research Division, February 2010, pp 20 – 21; 171 – 178

http://taxes.state.mn.us/legal_policy/Documents/other_supporting_content_2010_tax_expenditure_links.pdf

Minnesota uses a classification system to apply different rates to different classes of property. Minnesota's report includes a table that shows the difference in revenue if one class rate were applied to all classes of property. The table in the report includes both positive and negative amounts. The positive amounts show the foregone revenue, or tax increase that would occur if one class rate were applied to all types of property, and are therefore considered tax expenditures. Minnesota does not consider as tax expenditures the negative amounts that show the other side of the shift in tax burden. The total for Minnesota includes the positive amounts $534 million in the table. Minnesota's classifications suggest that if one class rate were applied to all property, the net change would only be $5 million, as opposed to the $534 million included in the total. Since this table considers foregone revenue, we include $534 million.

The following tax exemptions in the classification system are included in the total:

Residential Homestead	366.0
Farm Homestead	124.0
Timber	1.0
Seasonal Recreational Commercial	1.0
Subsidized Housing	13.0
Seasonal Recreational Residential	3.0
Residential Nonhomestead	26.0
Exempt Homestead	
Residential Homestead	366.0
Farm Homestead	124.0
Exempt Other	
Elementary and Secondary Schools	371.6
Public Burying Grounds	6.8
Hospitals	103.5
Charitable Institutions	61.9
Federal and State Forests, Parks, and Wildlife Refuges	87.5
Public Property Used for Public Purposes	662.9
Credit/Refund	
Taconite Homestead Credit	11.5
Powerline Credit	0.1
Agricultural/Forest	
Green Acres Treatment of Agricultural Land	66.5
Metropolitan Agricultural Preserves Land	7.5
Auxiliary Forest Tax	0.2
Metropolitan Agricultural Preserves Credit	0.3

Timber	1.0

Other

Open Space Property	13.7
Conservation Tax Credit	0.2
Seasonal Recreational Commercial	1.0
Subsidized Housing	13.0
Seasonal Recreational Residential	3.0
Residential Nonhomestead	26.0

Montana

Source: *Biennial Report: July 1, 2008 – June 30, 2010; Chapter: Tax Expenditures Biennial Report*, 2010, Department of Revenue, December 2010, pp 267 – 269
http://revenue.mt.gov/content/publications/biennial_reports/2008-2010/BiennialReport-TaxExp.pdf

Montana reports both the shift and loss, but does not indicate which number the state considers to be the cost of tax expenditures. Only the loss figures are included in this summary table.

Credit/refund

Property tax assistance program	1
The Extended Property Tax Assistance Program	0.92
The Disabled American Veterans Program	0.298

Oregon

Source: *State of Oregon 2009 – 2011 Tax Expenditure Report*, 2009 – 2011, Budget and Management Division, Department of Administrative Services and Research Section, Department of Revenue, 2009, pp 205 – 326
http://egov.oregon.gov/DOR/STATS/docs/ExpR09-11/FullReport.pdf

Oregon's numbers are larger because it calculates two years 2009-2011. Other states estimate one year at a time. Oregon calculates both Shift and Loss, which are both included here. In the table, only the loss is included.

Homestead exemption	Loss	Shift
Homestead Exemption for Federal Active Duty Military Service Members	2.1	0.3

Homestead Other	Loss	Shift
Academies, Daycare, and Student Housing	23.1	3.5
Leased Student Housing Publicly Owned	7.9	1.2
Higher Education Parking Space	3.7	0.6
Senior Services Centers	0.2	0.05
Leased Docks and Airports	7	1.1
Federal Land Under Recreation Facility	1.2	0.2
Federal Land Under Summer Homes	1	0.2

Housing Authority Rental Units	20.9	3.2
Nonprofit Elderly Housing State Funded	2.3	
Farm Labor Housing and Daycare Facilities	0.3	1
Nonprofit Public Park Use Land	0.2	0.05
Nonprofit Water Associations	0.2	0.05
State and Local Property	1.59	261.4
Pacific Northwest AC Intertie Exemption	1.2	0.2
Tribal Land Being Placed in U.S. Trust	0.5	0.1
Charitable, Literary, and Scientific Organizations	97.5	16
Fraternal Organizations	8.3	1.4
Religious Organizations	89.6	14.7
Cemeteries, Burial Grounds, and Mausoleums	5.2	0.9
City-Owned Sports Facilities	1.1	0.1
Federal Property	1.76	288.5
Amtrak Passenger Railroad	0.7	0.1
Fraternities, Sororities, and Cooperatives	0.3	0.1
Long-Term Care Facilities	0.1	0.05

Credit/refund	Loss	Shift
Disabled War Veterans or Their Spouses	24	3.9
War Veterans in Nonprofit Elderly Housing	0.01	0.05

Agriculture/Forest	Loss	Shift
Federal Standing Timber Under Contract	2.9	0.6
State and Local Standing Timber Under Contract	1.2	0.2
Western Private Standing Timber	348.6	67.1
Eastern Private Standing Timber	33.5	6.4
Private Farm and Logging Roads	26.3	5.1
Wildlife Habitat	1	0.2
Forest Home Sites	9.2	1.8
Western Private Forestland	53.9	10.4
Eastern Private Forestland	3.2	0.6
Small Tract Forestland Option	37.6	7.2
Farmland	262.4	50.5
Farm Home Sites	24.2	4.7

Business Incentive		
Commercial Buildings Under Construction	8.9	1.4
Enterprise Zone Business	36.9	6.1
Long-Term Rural Enterprise Zone (Property Tax)	13.8	2.7
Rural Renewable Energy Development	0.6	0.1
Strategic Investment Program (SIP)	103.9	17
New Houses in Distressed Area	3.5	1
Rehabilitated Housing	0.6	0.1
Multi-Family Rental Housing in City Core	11.3	1.7
New Housing for Low-Income Rental	1.4	0.2

Nonprofit Low-Income Rental Housing	11.7	1.8
Other		
Property Used for Golf Course and Effluent	0.1	0.05
Riparian Land	0.1	0.05
Forest Fire Protection Association	0.2	0.05
Inactive Mineral Interests	0.1	0.05
Leased State Land Board Land	1.6	0.3
Mining Claims on Federal Land	0.1	0.05
Historic Property	19.8	3.2
Railroad Right of Way in Rural Fire District	0.6	0.05
Open Space Land	1.2	0.2
Conservation Easements	0.1	0.05

Texas
Source: *Tax Exemptions and Tax Incidence (2009 – 2014)*, CY2009, Office of the Comptroller, February 27, 2009, pp 35 – 41
http://www.window.state.tx.us/taxinfo/incidence09/incidence09.pdf

Assessment Limitation	
Homestead Assessment Limitation	293.2
Credit/Refund	
Disabled veterans	24.7
Mandated $10,000 exemption: age 65 and older or disabled	195.7
Optional exemption: age 65 and older or disabled	96
Mandated $15,000 exemption	975.5
Optional exemption of up to 20 percent	452.6
Business Incentive	
Tax Abatement Agreement	3
Texas Economic Development Act	182.5
Other	
School tax ceiling: age 65 and older or disabled	611.5
Historic or archeological sites	3.9
Pollution control property	124.1

Vermont
Source: *Vermont Tax Expenditures 2009 Biennial Report*, FY2008, Tax Department and Joint Fiscal Office, January 15, 2009, pp 57 – 69
http://www.leg.state.vt.us/jfo/reports/2009-01%20Vermont%20Tax%20Expenditure%20Report.pdf

Other Exempt

Local Development Corporations	.09
Vermont State Colleges	0.9
University of Vermont	7.9
Libraries	0.84
Housing Authorities	1.1
Federal and State Government Property	14.9
Congressionally Chartered Organizations	0.45
Public, Pious, and Charitable Property	28.5
College Fraternities and Societies	0.14
Young Men's and Women's Christian Associations	0.17
Cemeteries	0.43
Owned by Agricultural Societies and Used Annually for Agricultural Fairs	0.56
Humane Societies; Property Owned by a Charitable, Nonprofit Organization Devoted to the Welfare, Protection, and Humane Treatment of Animals	0.06
FQHC and RHCs; Property Owned by a Federally Qualified Health Center or a Free standing, Federally Designated Rural Health Clinic	0.16
Municipally Owned	11
Large Power Plants	4.07
Municipalities Hosting Large Power Plants	0.65
Voted Exemptions Grandfathered in 1997	0.66
Railroad Property	0.16
Nonprofit Medical Service Corporations	0.55
Credit/Refund	
$10,000 exemption for veteran	0.23
Qualified Housing	0.55
Property Tax Adjustments	115.4
Business Incentives	
VEPC Approved Stabilization Agreements	0.13
Other	
Conserved Land/Development Rights	0.39
Use Value Appraisal Program	29.8

Washington

Source: *Tax Exemptions – 2008 (CY 2008 – CY 2011): A Study of Tax Exemptions, Tax Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, CY2010, Department of Revenue, Research Division, January 14, 2008, pp 1 – 49.
http://dor.wa.gov/Content/AboutUs/StatisticsAndReports/2008/Tax_Exemptions_2008/Default.aspx

Washington provides both state and local estimates. The totals separate the amounts. The amounts in the categories of tax expenditures in Table 1 combine both the local and state foregone revenue.

Exemptions Other

Exemptions	State	Local	State & Local
Public Corporations	0.84	3.4	4.2
Tribal Property	0.28	0.93	1.21
Foreign Consulates	0.02	0.09	0.11
Interstate Bridges	3.7	14.8	18.5
Churches, Parsonages, Convents, and Church Grounds	14.2	58.3	72.5
Nonsectarian Organizations	3.37	13.8	17.2
Nonprofit Merchandise Sales	0.06	0.26	0.32
Church Camps	0.48	1.96	2.44
Youth Organizations	0.44	1.82	2.27
Red Cross	0.03	0.12	0.15
Public Assembly Halls and Meeting Places	0.13	0.55	0.69
Private Schools: Colleges	7.32	30.1	37.4
Private Schools: K – 12	6	24.7	30.7
Conservation and Open Space Lands	0.27	1.09	1.36
Veterans Organizations	0.14	0.58	0.72
Humane Societies	0.04	0.17	0.21
Credit/Refund			
Targeted Multi-Unit Housing Facilities	0.53	2.18	2.71
Senior Citizens and Disabled Homeowners	16.6	80.9	97.5
Home Improvements	0.19	0.75	0.94
Widows/Widowers of Veterans	0.02		0.02
Senior Citizens/Disabled Homeowners Valuation Freeze	21.3	75.5	96.8
Senior Citizen/Disabled Homeowners Deferral	0.85		0.85
Agriculture/Forest			
Forest Land Statutory Values	7.96	31.8	39.8
Compensating Tax on Removal of Forest Land	0	0.55	0.55
Current Use: Open Space and Timber Land	2.75	11	13.7
Forest Land Exempt From Special Assessments	0	0.56	0.56
Current Use: Farm Land	17.8	71	88.8
Other			
Compensating Tax on Removal of Open Space Land	0.41	1.57	1.98
Rehabilitation of Historic Property	1.62	6.48	8.1

West Virginia

Source: *West Virginia Tax Expenditure Study: Special Business Tax, Business License Tax, Excise Tax, and Property Tax Expenditures,* FY2007, Research Division, State Tax Department, January 2009 pp124 – 154
http://www.wva.state.wv.us/wvtax/otherDocuments.aspx
http://www.state.wv.us/taxrev/publications/taxExpenditureStudy.2009.pdf

The West Virginia Tax Expenditure Study appears in three rotating parts: (1) Expenditures for Corporation Net Income Tax, Business Franchise Tax and Personal Income Tax (released Jan. 2011); (2) Expenditures for Consumers Sales and Service Tax and Use Tax (Jan. 2010); (3) Expenditures for Special Business Taxes, Business License Taxes, Excise Taxes and Property Taxes (Jan. 2009). It takes three years for a comprehensive report to be released.

The study breaks out the estimates by revenue forgone to each levying entity: State, County, School Boards, and Municipality. Table 1 of this report uses the sum of these four estimates.

Homestead Exemption

	State	County	School Boards	Municipalities	Total
Homestead exemption	0.18	11.31	29.07	3.46	44.02

Exempt Other

	State	County	School Boards	Municipalities	Total
Property whose income supports institutions of higher education	minimal	0.57	1.31	0.49	2.37
Dormitories, Literary Halls, and Clubrooms	0.03	1.86	4.92	1.41	8.22
Church Property	0.15	9.08	21.03	2.26	32.52
Libraries	0.01	0.7	0.169	0.47	1.349
Charitable and benevolent organizations	0.04	2.24	5.2	0.56	8.04
nonprofit corporations distributing electricity, water or natural gas or providing sewer services	0.12	7.09	18.34	1.74	27.29

Agriculture/Forest	Total
Farm real estate property	12.9
Managed timberland	4.7

Other

	State	County	School Boards	Municipalities	Total
Property used in the		0.16	0.29		0.45

subsistence of livestock					
Qualified Continuing Care Retirement Communities					
Preferential Treatment	minimal	0.9	0.24	0.03	1.17
Pollution Control facilities	Preferential treatment				43.4

Wisconsin

Source: *State of Wisconsin Summary of Tax Exemption Devices*, FY2008, Division of Executive Budget and Finance, Department of Administration and Division of Research and Policy, Department of Revenue, February 2009, pp 73 – 74
http://www.revenue.wi.gov/ra/09sumrpt.pdf

Exempt Other	
Religious	8.33
Education	3.04
Medical Facility	2.94
Housing	3.59
Public Benefit	2.28
Other	0.9

Appendix B

Los Alamos provided two sets of data for all years 2001-2011 except 2002: the tax roll and a report on the difference in valuation due to the cap. The tax roll for each year is created in October, NOV values are sent out by April 1, and the final tax roll values after appeals come out in November. Los Alamos provided the final tax roll for all years except 2011, for which we have NOV values. For simplicity, this appendix refers to the 2011 April values and the other years' November values as "tax roll" data. The second data file provided by Los Alamos for each year except 2002 includes only residential properties affected by the cap. The data sets provide estimated market values as well as the limited values of the properties limited by the 3 percent cap. This appendix refers to these data sets as "difference reports." The difference reports are run before April 1. These two reports were merged.

The variables of interest in the tax roll include the account number, which is the unique identifier for each property; the area id, which indicates if a property is residential or commercial; and the account type which indicates if the property is a mobile home, single family home, condos, or land for mobile homes. The columns of landact (land values) and impact (building values) consist of estimated market values for properties unaffected by the cap and limited values for properties affected by the cap. The mill levy provides the mill levy for each type of property for that year.

The difference reports include two observations for each property, one for land and one for buildings. The variables of interest in the difference reports include the account number; the classcd, which indicates if the value for the property is for the land (100s) or building (200s); the limited value; the estimated market value; and the difference between the market and limited values.

In order to merge the data in the difference report with the data in the tax roll, the observations in the difference report are collapsed into one observation for each property. Stata is used to collapse the observations. To collapse using Stata, four new data sets are created, one for each variable: limited values for buildings, limited values for land, market values for buildings, and market values for land. An example with fictional numbers follows.

Before:

ACCOUNT	CLASSCD	Limited Values	Estimated Market values	Difference
R#####1	105	50,000	60,000	10,000
R#####1	205	100,000	120,000	20,000

After:

Account	Limited value for land (limvalland)
R#####1	50,000

Account	Limited value for Building (limvalbldg)

R#####1	100,000

Account	Market value for Land (markvalland)
R#####1	60,000

Account	Market value for Building (markvalbldg)
R#####1	120,000

Each of the four new data sets are merged into the tax roll using the account number as the unique identifier. After all merges, the merged tax roll data set includes the account number, the area id, account type, landact, impact, mill_levy, limvalland, limvalbldg, markvalland, and markvalbldg for each property. For properties unaffected by the cap, the values for limvalland, limvalbldg, markvalland, and markvalbldg are missing in the merged tax roll data set because the difference reports only had data on residential properties affected by the cap.

We create three new variables to sum the land and building values. We sum landact and impact to find the total act value for each property (totact). We sum the limited value for land and buildings to find the total limited value for each property affected by the cap (totlimcap). We sum the market values for land and buildings to find the total market value for each property affected by the cap (totmarkcap). All properties have a totact value; only properties affected by the cap have values for totlimcap and totmarkcap. "Cap" in the variable name refers to the fact that only properties affected by the cap have values for these variables.

Totact consists of the market values for properties unaffected by the cap and limited values for properties affected by the cap. For properties affected by the cap, totact equals totlimcap. The fractional assessment in New Mexico is 33.33333%. We generate a new variable by dividing totact by 3 (totact3). The total of the values in totact3 is the limited assessed value in the table 2.

In order to calculate the market assessed value in the table, we generate a new variable of total market value (totmark) for each property, which consists of totact values for properties unaffected by the cap and totmarkcap values for properties affected by the cap. Every property has a total market value in the column for totmark. The market values are then divided by 3 (totmark3) and then totaled to provide the market value in the table 2.

Though the totlimcap should equal values in totact, these numbers are not equal for a few properties. This is because the difference report (totlimcap) is done before April 1 and the totact numbers in the tax roll are finalized in November after all appeals. When these two numbers differ, we defer to the totact number. This issue applies to 23 properties in the 2001 data.

Data deletions

As discussed in the text, mobile homes, land for mobile homes, condo common areas, and data errors were deleted from the data prior to analysis. The following table lists the data deletions.

Los Alamos County Data Deletions

	2001	2003	2004	2005	2006	2007	2008	2009	2010	2011
Mobile Homes	385	279	274	263	254	245	225	210	197	190
Land Res MH	132	28	26	26	21	21	22	22	20	18
Condo Common	0	0	0	0	0	0	4	116	116	117
Limited > Market	1	3	0	0	0	0	0	0	0	0
SGL Family 0 value	87	1	0	1	1	3	1	2	2	0
Townhouse 0 value	183	0	0	0	0	0	0	0	0	0
Vacant Residence	34	0	0	0	0	0	0	0	0	0
Zero value and missing account type	0	0	0	0	0	0	1	0	0	0
Cap applied to non-residence	0	0	0	0	0	1	0	0	0	0
Account Type "Exempt Misc"	0	0	1	0	0	0	0	0	0	0
Total	822	311	301	290	276	270	253	350	335	325

In 2001, many properties had a zero building (impact) value. The Chief Deputy Assessor of Los Alamos explained that the Cerro Grande Fire destroyed 300 homes in 2000 requiring adjustments to those accounts in 2001. These homes were rebuilt from 2001-2004. In addition, 2001 was the first year with the new system in place.[32]

In 2007, it appears the cap applied to a vacant residence categorized as a non-residential property. We deleted this from the data because it appears to be a data error of some sort. The cap should only apply to 1R or 2R, and not to vacant residence.

One single family home was excluded from the 2011 analysis because its "areaid" was 1N instead of 1R, meaning it was classified as a non-residential property.

Caveats

Very few homes are affected by the senior's low-income property tax freeze. The same five homes are affected each year 2003-2008. One home was affected in 2001. None were affected in 2009. Four homes were affected in 2010, and five homes were affected in 2011. The totalact values for these homes would be their frozen values rather than the market value and we do not have their market value, so it lowers the estimate of market assessed value. However, so few homes are affected, we ignore this issue.

After the analysis was conducted, one single-family property was discovered to be over-valued by a factor of three due to a data error in 2011, 2010, 2009, and 2008.

[32] Email correspondence from the Chief Deputy Assessor at Los Alamos on July 5, 2011