IMPACTS OF PROPERTY TAX LIMITATIONS ON EDUCATION SPENDING*

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INTRODUCTION

TAX AND EXPENDITURE LIMITATIONS (TELs) COME IN various forms in the United States. Even when focusing on property tax limitations, one observes different policies including rate limits, assessment limits, revenue rollbacks, expenditure limits, or property tax freezes.[1] Interest in property tax limits has generally transpired in light of the desire for both lower property tax bills and limited growth of government (Brome and Saas, 2006; Temple, 1996; Fisher and Gade, 1991). One type of property tax limitation is a cap on property tax revenue growth. A recent report by Lyons and Lav (2007) displays the various property tax revenue caps across states. These usually limit the amount that property tax revenue can grow on an annual basis. Some are restricted by a predetermined fixed percentage (Massachusetts' Proposition 2 ½ limits property tax revenue growth to 2.5 percent per year), the inflation rate (local property rates in Michigan must be set so that total property tax revenues do not grow faster than inflation) or by the lesser of the two (some districts in Illinois restrict total property tax revenue growth to 5 percent or inflation—whichever is less).

Other property tax limitations include caps on the property tax rate. The most famous example of these is California's Proposition 13. Proposition 13 caps the ad valorem property tax rate on real property at 1 percent of the assessed value. It is important to note that only restricting property tax rates does not necessarily limit a property owner's tax liability if assessment values are allowed to vary. If a jurisdiction wished to restrict property tax revenue growth without caps on revenue, it could combine restrictions on assessments as well as the property tax rates as is done in California. Assessment limits are limits on the growth of a property's assessed value. California restricts the growth of an individual's assessed property to the inflation rate or 2 percent – whichever is lower.

The property tax limitation of interest in this study is the assessment limit that is in place in Maryland. Though not coupled with a property tax rate limit, the state of Maryland passed their version of the "Homestead Property Tax Credit" in the late 1970s with intentions of limiting the taxation of large annual assessment increases on owner-occupied property (Maryland State Department of Assessments and Taxation, 2007).

Homeowners in the state of Maryland have witnessed significant increases in assessment values over the past decade. As seen in Table 1, Maryland saw an average increase of 252.7 percent in inflation-adjusted home sales prices from 1994 to 2006 (Maryland Department of Assessments and Taxation, 2007; U.S. Bureau of Labor Statistics, 2007). Maryland's Homestead Property Tax Credit specifically states that any annual assessment increase for a residential home that is greater than 10 percent is effectively not taxed. Interestingly, the state government of Maryland grants counties and municipalities the right to set the assessment cap as low as 0 percent. This variation in county caps on assessment increases provides within-state differences in the tax limitation measures.

Maryland is a particularly interesting subject for a couple of reasons. First, Maryland began allowing different county assessment caps in 1992 which allows for a nice time series of data to study. Second, the structure of Maryland's assessment cap program allows for a within-state study that includes variations among county jurisdictions, which eliminates some problems of other studies that are discussed later.

Taking advantage of this unique within-state variation in tax limitations, we empirically analyze the effects of existing assessment caps among Maryland counties over the years 1992 to 2006. Preliminary results indicate that stricter assessment caps are associated with lower property tax revenue and less education expenditures. The paper

Table 1
Inflation-Adjusted Median Home Sales Prices by County

County	1994	2006 (in 1994 dollars)	Percent Change
Allegany	$52,000	$119,402	129.6
Anne Arundel	$134,000	$455,572	240.0
Baltimore City	$62,500	$190,445	204.7
Baltimore County	$113,000	$340,081	201.0
Calvert	$121,350	$446,186	267.7
Caroline	$82,900	$360,588	335.0
Carroll	$134,000	$469,312	250.2
Cecil	$100,925	$350,828	247.6
Charles	$129,900	$455,709	250.8
Dorchester	$75,000	$299,271	299.0
Frederick	$128,655	$448,907	248.9
Garrett	$64,000	$185,004	189.1
Harford	$115,000	$353,684	207.6
Howard	$158,415	$542,769	242.6
Kent	$92,000	$336,000	265.2
Montgomery	$172,500	$578,138	235.2
Prince George's	$128,500	$428,502	233.5
Queen Anne's	$129,477	$510,121	294.0
Saint Mary's	$114,820	$398,915	247.4
Somerset	$50,750	$198,471	291.1
Talbot	$118,500	$500,878	322.7
Washington	$94,000	$329,574	250.6
Wicomico	$84,700	$266,623	214.8
Worcester	$82,250	$408,097	396.2
Average	**$105,798**	**$373,878**	**252.7**

is structured as follows. First, the relevant literature on tax and expenditure limitations is discussed. Next, Maryland's Homestead Property Tax Credit program is described, followed by preliminary results and the conclusion.

LITERATURE REVIEW

There are generally two types of studies in the existing literature – within-state studies and cross-state studies – each subject to possible complications (Dye and McGuire, 1997). Most within-state studies examine a statewide tax limit that lacks a counterexample that would allow an understanding of how policies would have been affected in the absence of tax limits. Cross-state studies present difficulties in taking into account differences in limitation policies and fiscal structures of the various states included. Because of the structure of Maryland's assessment caps, our study does not suffer from either of these complications. The existing variation in county caps on assessment

increases provides within-state differences in the tax limitation measures, eliminating the problems discussed earlier.

One area of literature that has emerged since the implementation of property tax limitations examines the effectiveness of limits on constraining government spending. Because of the importance of property tax revenue in financing education, several studies have shown a particular interest in examining the impact of tax limitations on education spending. Dye and McGuire (1997) investigate the effects of limiting property tax revenue growth on fiscal behavior in Illinois jurisdictions. They find that those jurisdictions with property tax caps do indeed have different fiscal characteristics than jurisdictions without caps. Specifically, those jurisdictions with a cap have seen lower growth rates in property tax revenue.

Bradbury et al. (2001) look at the impacts of property tax rate limits in Massachusetts on fiscal behavior in the state. They find that the rate limits significantly constrain spending on education in

many local jurisdictions. However, because many communities witnessed gains in property values during the time of the study, education spending still increased in the face of property tax rate limitations.

Bradbury et al. (2001) also model the effects of changes in school spending, which are constrained by property tax limitations, on the sales price of houses in Massachusetts jurisdictions. They argue that because changes in school spending could be taken into consideration when purchasing a home, stringent property tax limits could have negative consequences on the demand for housing, and thus result in decreased home sales prices within a jurisdiction. Similarly, they find that school quality, as measured by test scores, has a positive and significant effect on housing appreciation. Thus, if school quality were to diminish as a result of lower spending on education, it is possible that housing prices could suffer.

Fisher and Gade (1991) study the effects of primary property tax levy growth limits and expenditure limits in Arizona in the 1980s. They find that reliance on property taxes and total expenditure growth by local governments in Arizona were not lowered by property tax and expenditure limits alone. In essence, they find the limits to be ineffective. Fisher and Gade (1991) argue that this is because where the limits were constraining, the voters in that jurisdiction had either implemented non-constraining alternatives or had simply overruled the limits completely. However, results indicate that the limits did induce many localities to borrow more to finance capital expenditures.

In an attempt to take into consideration the imposition of a TEL and its effectiveness in light of education reform programs, Blankenau and Skidmore (2004) study the joint effects of reform and TELs on education spending. Among other findings, they discover that decreased education spending in localities with TELs is even more pronounced when coupled with reform. The authors also suggest that TELs further constrain wealthier jurisdictions, while giving additional state aid to poorer jurisdictions.

MARYLAND'S PROPERTY TAX LIMIT

In 1977, the state legislature in Maryland passed a law requiring that any annual assessment increase over 15 percent is not taxed. The Homestead Property Tax Credit is not explicitly a cap on assessment values because the assessed values can grow but the tax credit applied to large increases serves a similar purpose. Table 2 presents an example of the tax credit. Suppose the assessed value of an individual's property increases from $265,500 in 2005 to $318,000 in 2006 – a 20 percent increase.[2] If a 15 percent cap on assessment increases is imposed, then the assessed value is $12,675 above the limited increase. The tax credit then applies to the taxes due on the $12,675. If the tax rate is $1.20 per $100 of assessed value then the tax credit would amount to $152.

In the early 1990s, Maryland made some substantial changes to the program. Beginning in 1992, the state credit was applied to any annual assessment increase over 10 percent. In addition, counties were required to adopt a homestead cap program for the local property tax and counties were allowed to fix the cap at any limit ranging from 0 to 10 percent. Figure 1 and

Table 2
Hypothetical Tax Credit for Different Caps

	15% Limit	10% Limit	5% Limit	0% Limit
Assessed Value in 2005	$265,500	$265,500	$265,500	$265,500
Assessed Value in 2006	$318,000	$318,000	$318,000	$318,000
Assessment Growth	20%	20%	20%	20%
Assessed Value with Cap	$305,325	$292,050	$278,775	$265,500
Amount over Limit	$12,675	$25,950	$39,225	$52,500
Tax Liability without Cap	$3,816	$3,816	$3,816	$3,816
Tax Credit	$152	$311	$471	$630
Tax Owed	$3,664	$3,505	$3,345	$3,186

Credit calculated based on a property tax rate of $1.20 per $100 of assessed value.

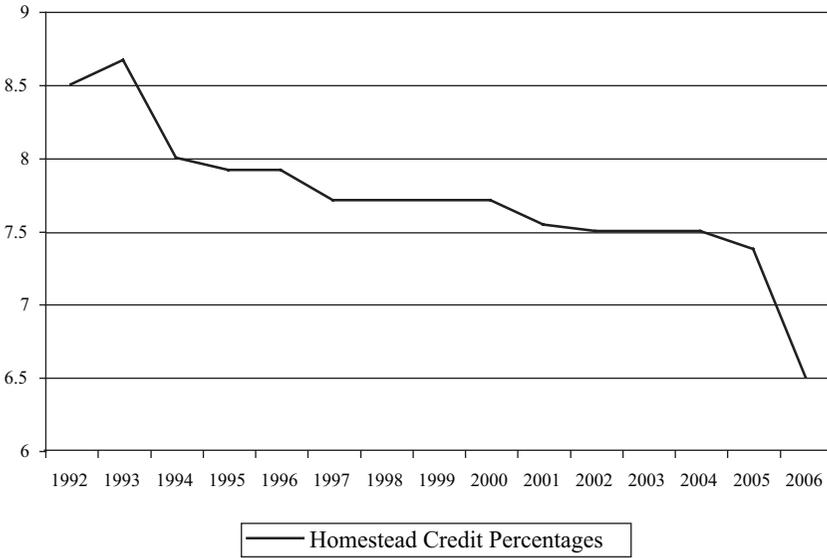Figure 1: **Average Homestead Credit Percentages**

Table 3 provide descriptive statistics. As seen in Figure 1, the average homestead credit cap for counties has fallen from 8.5 percent to 7.375 percent between 1992 and 2005. Table 3 provides evidence that homestead caps range from 0 percent to 10 percent across counties making for a nice cross-section.

For an example showing how the cap level can affect property tax revenue across counties, consider the examples shown in Table 2. The tax credit varies depending upon the assessment cap. In the example, it is seen that the tax credit given to homeowner's with identical assessed values and property tax rates ranges from $311 with a 10 percent cap to $630 with a 0 percent cap in the hypothetical example. It is clear that a county with a lower cap will collect less property tax revenues, holding house values and property tax rates constant. If the assessment values are not exceeding the caps then the assessment cap will not take effect. Figure 2 displays the county average growth in home sale prices for evidence of increasing home values. The tax credit is applied to the assessed values of homes so the sales price is not necessarily evidence that the cap will be applied, but the figure does clearly display that counties

Table 3
Homestead Credit Caps (in percentages)

County	1992	2005
Allegany	10	10
Anne Arundel	10	2
Baltimore City	4	4
Baltimore County	4	4
Calvert	0	10
Caroline	10	10
Carroll	10	10
Cecil	10	10
Charles	10	10
Dorchester	10	10
Frederick	10	10
Garrett	10	5
Harford	6	10
Howard	5	5
Kent	5	5
Montgomery	10	10
Prince George's	10	2
Queen Anne's	10	10
Saint Mary's	10	5
Somerset	10	10
Talbot	10	0
Washington	10	10
Wicomico	10	10
Worcester	10	5
Averages	**8.5**	**7.375**

Figure 2: **Average Percentage Change in Home Sale Prices**

Home Sale Price Growth (%)

have experienced large growth in home sale prices. As seen in Table 4 the average home sale price increased by more than the cap in all but one county, perhaps evidence that counties are increasingly running into the cap.

MODELING FRAMEWORK

This study sets out to understand the impacts that property assessment limits have on local fiscal policies. One obvious issue is the effectiveness of the assessment cap on limiting property tax revenue. As seen in Table 2, holding all else constant, a lower assessment cap decreases the property tax revenue available to a county. Another related issue considers the expenditure effects of the assessment cap. If the cap is successful at limiting property tax revenue, does this restriction in revenues affect the spending of local governments?[3] Because education spending makes up a large percentage of local government spending (48 percent in 2005 (U.S. Census Bureau, 2005)), then education spending is particularly vulnerable to the assessment cap.

To estimate the effect of the assessment cap, we first regress property tax revenue (overall, per capita and per pupil) on the homestead cap, holding property tax rates, changes in home sales

Table 4
Homestead Credit Caps and Growth of Home Sale Prices for 2005 (in percentages)

County	Cap	Price Growth
Allegany	10	7.7
Anne Arundel	2	22.4
Baltimore City	4	23.5
Baltimore County	4	22.7
Calvert	10	23.0
Caroline	10	18.8
Carroll	10	20.4
Cecil	10	20.0
Charles	10	25.3
Dorchester	10	25.0
Frederick	10	22.6
Garrett	5	31.0
Harford	10	17.9
Howard	5	21.4
Kent	5	42.9
Montgomery	10	17.2
Prince George's	2	25.6
Queen Anne's	10	20.9
Saint Mary's	5	28.2
Somerset	10	28.0
Talbot	0	17.0
Washington	10	24.2
Wicomico	10	20.5
Worcester	5	38.1
Averages	**7.375**	**23.5**

prices, and other control variables constant.[4] The estimating equation takes the form:

(1) $\quad R_{it} = \alpha_0 + \alpha_1 C_{it} + \alpha_2 T_{it} + \alpha_3 H_{it} + \gamma X_{it} + \varepsilon_{it}$,

where i represents the county ($i = 1, \ldots, 24$), t represents the year ($t = 1, \ldots, 8$), R is property tax revenue, C is the assessment cap, T is the property tax rate, H is the growth in house prices, X is a vector of control variables, and ε is the error term. Second, we regress education spending (overall, per capita and per pupil) on the homestead cap, holding property tax rates, changes in home sales prices, and other control variables constant. The estimating equation takes the form:

(2) $\quad E_{it} = \beta_0 + \beta_1 C_{it} + \beta_2 T_{it} + \beta_3 H_{it} + \delta X_{it} + \mu_{it}$,

where i represents the county ($i = 1, \ldots, 24$), t represents the year ($t = 1, \ldots, 11$), E is education expenditures, C is the assessment cap, T is the property tax rate, H is the growth in house prices, X is a vector of control variables, and μ is the error term.

A couple of econometric issues must first be addressed before estimation. Because tax and expenditure limits are often created to limit the size of government, estimation of equations (1) and (2) are potentially subject to policy endogeneity. To eliminate potential bias in the estimation, either an instrumental variable technique must be used or the independent variables can be lagged. An appropriate instrument would be a variable that is significantly correlated with the assessment cap but has no independent effect on the fiscal variable. Because no appropriate instruments have been found at this time, the assessment limit variables are lagged by one period, leading to the following estimating equations:

(3) $\quad R_{it} = \alpha_0 + \alpha_1 C_{it-1} + \alpha_2 T_{it-1} + \alpha_3 H_{it-1}$
$\quad + \gamma X_{it} + \varepsilon_{it}$

(4) $\quad E_{it} = \beta_0 + \beta_1 C_{it-1} + \beta_2 T_{it-1} + \beta_3 H_{it-1}$
$\quad + \delta X_{it} + \mu_{it}$.

DATA

The data for this research is a panel of Maryland counties from 1995-2006. The use of Maryland data here does not necessarily provide parallels to all other states. However the use of property taxes at the local level is not unique to Maryland. According to the U.S. Census Bureau (2005), local governments collected nearly 97 percent of state and local property tax revenue in 2004. The use of Maryland data is still useful here for informing the literature on assessment limits because of the unique within-state varia-tion.

The assessment cap in this study is the *county* imposed Homestead Property Tax Credit program in Maryland, which limits the increase in tax-able county assessments to a fixed percentage. The limit applies only to the principal residence of the property owner. While the homestead cap is only imposed on residential property, this research investigates its impact on total real and personal property tax revenue.[5] Property tax revenue is expressed in per capita and per pupil terms. Summary statistics and data definitions and sources are included in Appendix Tables 1 and 2. Education expenditures are defined as any funds (from all levels of government) spent on K-12 public education, including spending on administration, instruction, special education, student personnel services, student transporta-tion, health services, and operations of physical plant.

As seen in Table 2, the revenue effect of the assessment cap depends critically upon the growth in assessment value and the property tax rate. Because of limitations on residential assessment values, median sales prices of homes are included to capture the average change in the market value of residential property. The tax rates are county-wide real property tax rates that apply to all non-municipal areas.[6]

Explanatory Variables

Other variables besides assessment limits affect local fiscal policies so they must be included in the estimation procedure. Per capita income, per pupil wealth, percent of population that is enrolled in public schools (K-12), population, enrollment, and percent of students receiving food assistance are included to account for effects of demographic characteristics on tax rates.

If high-income individuals live in higher val-ued property, then the property tax base may be larger which increases the property tax revenue,

holding all else constant. Counties with larger per pupil wealth may also have larger property tax bases; so holding all else constant, the property tax revenue would be larger. If education is a normal good then it is expected that these two variables will also be positively correlated with education expenditures. Counties with relatively large student populations enrolled in public schools have more demand for education so may require more local funds, including property tax revenues.

Holding all else constant, a larger population would be expected to require more government rev-enues to provide the needed government services. Similarly, a larger enrollment would be expected to be associated with larger education expenditures, as well as larger property tax revenues to finance the expenditures. Counties with relatively large per-centages of students who qualify for free/reduced price meals have more need for public assistance, so holding all else constant, more property tax revenues are needed.

In addition to the assessment cap, several counties in Maryland impose additional property tax limits. Five (out of 24) counties in Maryland impose direct limits on the property tax revenue of

Table 5
Random Effects Results

	Property Tax Revenue (000s)	Property Tax Revenue Per Capita	Property Tax Revenue Per Pupil
Homestead Cap (t-1)	**3,922.1116****	2.9299	31.0656
	(1,850.7578)	(4.1343)	(26.7097)
Property Tax Rate (t-1)	**-18,525.7645*****	18.7187	**172.7096***
	(5,065.6228)	(12.9723)	(89.7604)
Median Home Sales Price Growth (t-1)	-193.3970	0.6161	7.1387
	(253.1001)	(0.7254)	(5.1767)
Property Tax Revenue Cap (t-1)	**-27,350.3647*****	**-84.9178*****	**-727.3147*****
	(10,319.4385)	(27.8746)	(194.8799)
Per Capita Income	**9.0119*****	-0.0002	0.0028
	(1.3297)	(0.0025)	(0.0163)
Population	**0.7040*****		
	(0.0379)		
Wealth Per Pupil	-0.0932	**0.0018*****	**0.0128*****
	(0.0873)	(0.0002)	(0.0012)
Student Percent of Population	**7,952.3567****	**32.0270*****	-19.3568
	(3,573.1464)	(8.0992)	(52.4961)
Percent Meal Assistance	**1,957.6514*****	1.6760	**17.4319****
	(514.5205)	(1.1625)	(7.6184)
Constant	**-404151.3768*****	**-461.7644*****	341.3811
	(70,365.5932)	(173.8657)	(1,210.6223)
R-Squared	0.95	0.69	0.75
Observations	192	192	192

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

the county. Four counties (Anne Arundel, Montgomery, Talbot and Wicomico) impose restrictions on the growth of property tax revenue. All impose some requirement that property tax revenues grow by less than some fixed percentage or the Consumer Price Index, whichever is less. To control for these tax limits, dummies are included if the county imposes a limit on the revenue growth.[7] One county (Prince George's) places limits on the property tax rate, which is controlled for in the equation. Finally, county and year dummy variables are included to control for county affects that are time-invariant and time effects that are county-invariant.

RESULTS

Results from estimating equations (3) and (4) are presented in Tables 5 and 6.[8] Generally, property tax limits – both assessment caps and revenue caps – negatively affect property tax revenues and education expenditures. As seen in Table 5, a 1 percentage point lower assessment cap is associated with nearly $4 million less property tax revenues. As seen in Table 6, a 1 percentage point lower assessment cap is associated with nearly $7.5 million less overall education expenditures, $4 less education expenditures per capita and $42 less education expenditures per pupil.

Table 6
Random Effects Results

	Education Expenditures (000s)	Education Expenditures Per Capita	Education Expenditures Per Pupil
Homestead Cap (*t*-1)	7,509.8181***	4.3025*	42.6134***
	(1,647.9834)	(2.5385)	(16.3276)
Property Tax Rate (*t*-1)	-67,908.7691***	-9.4184	19.6685
	(7,132.8425)	(9.7801)	(59.2719)
Median Home Sales Price Growth (*t*-1)	293.9558	0.3381	2.6002
	(438.5626)	(0.5286)	(3.4676)
Property Tax Revenue Cap (*t*-1)	-58,109.8133***	-40.0553*	-344.6573***
	(16,595.0322)	(21.0526)	(132.7722)
Enrollment	7.2791***	0.0007**	
	(0.1846)	(0.0003)	
Wealth Per Pupil	-0.3080***	0.0004***	0.0035***
	(0.0848)	(0.0001)	(0.0008)
Percent Meal Assistance	5,459.4752***	0.9016	14.0241***
	(513.2738)	(0.7632)	(4.8561)
Per Capita Income	15.3698***	0.0005	0.0215**
	(1.4153)	(0.0020)	(0.0105)
Student Percent of Population	9,397.2843***	51.6647***	-152.8890***
	(3,330.8870)	(5.2361)	(33.6683)
Constant	-535903.1720***	345.5707***	6,264.9959***
	(72,985.1692)	(116.5295)	(707.9435)
R-Squared	0.98	0.83	0.82
Observations	264	264	264

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Imposing a property tax revenue cap also has negative impacts on local fiscal policies. In all six specifications, a property tax revenue cap is negatively correlated with property tax revenues and education expenditures. The lagged residential property tax rate is statistically significant in both the property tax revenue specification and the education expenditure specification. A 1 percentage point lower residential property tax rate is associated with an increase in total property tax revenue of about $18.5 million. It is important to note that total property tax revenue includes revenue generated from sources other than residential property, such as commercial property. In addition, as illustrated by the descriptive statistics, it is evident that over the span of our panel we have witnessed significant increases in home values which may have allowed counties to decrease the residential property tax rate and still witness increased property tax revenue.

The other explanatory variables behave largely as expected. A higher share of student population, higher per capita income, and a higher percentage of students receiving meal assistance are all associated with higher property tax revenue and education spending. Higher levels of population and enrollment in schools are also associated with increased property tax revenue and expenditures on education.

Interestingly, increased wealth per pupil is associated with greater education expenditures per capita and education expenditures per pupil. However, an increase in wealth is also associated with decreased overall education expenditures. Although the signs on these coefficients are not consistent across specifications, the education expenditures per capita and per pupil specifications yield coefficients that are of very low magnitude.

CONCLUSIONS

The introduction of Proposition 13 has influenced many states to adopt tax and expenditure limitations in the form of property tax limits. Maryland is no exception. The Homestead Property Tax Credit allows counties to set their own assessment cap on the assessment value increases from one year to the next between 0 and 10 percent. This provides variation across counties with regards to how much they prefer to constrain the inflow of property tax revenue.

Using Maryland's unique structure as a natural experiment, we have empirically identified the effects of Maryland's property tax assessment caps on property tax revenue and education expenditures. Our findings indicate that the use of assessment caps to provide protection against sizeable increases in property tax bills can limit property tax revenues and education spending. Specifically, a on1 percentage point lower assessment cap is associated with a $3.9 million loss in property tax revenue and a $7.5 million loss in overall education expenditures.

Notes

[1] For a discussion of the consequences of each, see National Conference of State Legislatures (2002).

[2] These are the median sale price for homes in Maryland for 2005 and 2006 (Maryland Department of Assessments and Taxation, 2007).

[3] In 2005, property tax revenue made up an average of 25 percent of total local revenue in Maryland (U.S. Census Bureau).

[4] Home sales prices are used here, but further research will use the assessed values of residential property.

[5] Data for this study only consist of property tax revenue data from 1999-2006.

[6] Property tax rates are expressed as taxes per $100 of assessed value.

[7] For two of the counties (Anne Arundel and Montgomery), the property tax revenue cap has been in effect for the entire span of the panel, so the dummy is perfectly correlated with the county-dummy variables. Therefore, the dummy variables for these two counties have been removed.

[8] Hausman tests indicate that random-effects panel data regression techniques are appropriate.

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Appendix Table 1
Summary Statistics

Variable Name	1996				2006			
	Mean	*Std. Dev*	*Min*	*Max*	*Mean*	*Std. Dev*	*Min*	*Max*
Property Tax Revenues (000s)	143042.2	202298.5	6488.5	798032.0	203567.3	270167.9	10031.7	1108484.0
Property Tax Revenues Per Capita	584.0	177.5	263.3	941.5	770.1	259.4	373.2	1567.9
Property Tax Revenues Per Pupil	3549.3	1151.1	1990.2	6383.1	5380.1	2120.8	2934.3	13289.4
Education Expenditures (000s)	212841.6	266714.0	19150.6	925879.8	344020.5	428484.4	25429.7	1636533.0
Education Expenditures Per Capita	995.4	104.9	788.8	1197.3	1385.1	169.4	1144.5	1778.7
Education Expenditures Per Pupil	6054.4	504.6	5262.0	7697.0	9346.8	898.0	8237.0	11740.0
Homestead Cap	7.92	3.15	0	10	6.50	3.15	0	10
Property Tax Rate	2.43	0.81	0.95	5.85	1.00	0.30	0.54	2.31
Median Home Sales Price Growth	4.27	5.05	-6.68	11.51	16.75	9.15	2.88	48.92
Enrollment	33564.33	39758.51	2863	122415	35743.54	41508.68	2440	139398
Per Capita Income	24195.63	5519.262	15014	39525	36840.88	8936.579	23125	59953
Population	212999.4	266600.6	18864	819613	232900	282993.8	19908	927405
Wealth Per Pupil	218621.2	83851.75	120889	429708	317418.2	142794.5	170179	757781
Student Percent of Population	16.50	1.83	13.24	20.39	15.65	2.12	11.50	19.92
Percent Meal Assistance	29.69	14.99	8.80	70.10	32.52	16.15	10.25	73.59

Appendix Table 2
Data Description

Variable Name	Definition	Source
Property Tax Revenues (000s)	Real Property Tax Revenues divided by 1000	MD Dept of Assessments and Taxation
Property Tax Revenues per capita	Real Property Tax Revenues divided by population	MD Dept of Assessments and Taxation
Property Tax Revenues per pupil	Real Property Tax Revenues divided by enrolled students	MD Dept of Assessments and Taxation
Education Expenditures (000s)	Overall Education Expenditures divided by 1000	State of MD Report Card
Education Expenditures per capita	Overall Education Expenditures divided by population	State of MD Report Card
Education Expenditures per pupil	Overall Education Expenditures divided by enrolled students	State of MD Report Card
Homestead Cap	The limit on the increase in taxable assessments each year by county	MD Dept of Assessments and Taxation
Property Tax Rate	Real Property Tax Rate per $100 of assessed value	MD Dept of Assessments and Taxation
Median Home Sales Price Growth	The median sale price for owner-occupied real property transfers by county	MD Dept of Assessments and Taxation
Enrollment	Number of students enrolled in county school system	State of MD Report Card
Per Capita Income	Total County Personal Income divided by population	U.S. Bureau of Economic Analysis
Population	Total number of county residents	U.S. Census Bureau
Wealth Per Pupil	The sum of a county's net taxable income, the assessed value of real property, and 50 percent of the assessed value of personal property	State of MD Report Card
Student Percent of Population	Number of enrolled students divided by total county population	State of MD Report Card
Percent Meal Assistance	The number of students receiving free or reduced price meals divided by enrollment	State of MD Report Card