State-Sponsored College §529 Plans: The Influence of Tax and Non-Tax Factors on Investors' Choice

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Abstract

Taxpayers have invested over $45 billion in state-sponsored §529 college savings plans. Created by federal legislation in 1996 and enhanced by a 2001 tax law change, all 50 states and the District of Columbia now offer a §529 plan. States provide tax deductions and/or exemptions to taxpayers choosing in-state plans. Because of the lack of historical return data on these funds and the absence of comparable investment vehicles, investors rely extensively upon securities dealers for fund recommendations. Using proprietary panel data for 77 plans in 50 states over eight quarters, this paper compares tax and non-tax factors that drive §529 investment choices. This paper explains why an investor may choose an out-of-state §529 plan despite losing a potential state tax deduction. This paper also has policy implications for lifetime savings accounts proposed by the Bush administration.

Keywords: 529 plans, higher education, investor choice, tax subsidy

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INTRODUCTION

This study examines tax and non-tax factors that influence investors' choice of state-sponsored §529 college saving plans. As of June 30, 2004, $45 billion was invested in §529 plans, and the Financial Research Corporation (FRC) predicts that amount to reach $400 billion by 2010 (Dow 2004). State-sponsored §529 plans have grown exponentially since a 2001 federal income tax law change allowed for tax-free distribution of funds for qualified college expenses (Economic Growth and Tax Relief Reconciliation Act of 2001). This study allows us to study the factors that influenced §529 plan investments across plans after this important tax law change was enacted.

We study the time period between October 1, 2001, and September 30, 2003, during which §529 plan investments tripled as investors opened an additional 3.7 million accounts. Investors find §529 plans to be attractive investments, as they offer federal and state tax benefits along with high contribution limits and donor control of the assets (Bullard 2004). However, some plans are criticized because unusually high management fees and loads significantly reduce investment returns (Turgesen 2004; Goolsbee 2002). Mary L. Schapiro, National Association of Securities Dealers' (NASD) vice-chairman and president, identified §529 plans as one of … "two products that are among those most frequently sold to investors and where we have heightened concern about sales practices" (NASD Conference 5/3/04).[1]

[1] Variable annuities is the second.

Although direct investment is often less expensive, 68 percent of the §529 plans were sold through brokers in 2002, and that figure is predicted to exceed 85 percent (Korn 2003). Both the U.S. Senate and the U.S. House of Representatives have held hearings to investigate whether financial advisors recommended §529 plans based upon commission payments while ignoring available state tax benefits.[2] A Securities and Exchange Commission (SEC) task force is examining §529 plan fee structures and investor disclosures, and the NASD is investigating 20 broker sold funds that have unusually high amounts of non-resident sales and high expenses.[3]

This paper uses a random effects model to examine investments in state-sponsored §529 plans for quarters ending December 31, 2001 through September 30, 2003. We gather account information for 77 plans and regress tax and non-tax attributes, such as fees and investment choices, on the number of accounts and the assets under management. Consistent with prior research, we control for factors that influence fund investments (e.g., media attention and fund family size (Sirri and Tufano 1998)). We also control for factors that may influence demand for college savings plans. These include state population, state youth population, average tuition costs, and personal income per state. We find the amount of state tax deductions from plan contributions is *negatively* related to the number of accounts, meaning that the states providing the largest state income tax deduction for residents'

[2] House Committee on Financial Services hearing was held on June 2, 2004, and the U.S. Senate Governmental Affairs Subcommittee on Financial Management, the Budget and International Security hearing was held on September 30, 2004.

[3] For example, only 2.5 percent of the Rhode Island advisor-sold §529 plan accounts belong to Rhode Island residents. The funds under investigation have at least 90 percent of sales to non-resident plans. This investigation which began in 2003 with an investigation of six §529 plan distributors now includes 20. The NASD issued an Investor Alert on §529 plans on September 13, 2004.

contributions are likely to have the smallest number of accounts. In addition, our results demonstrate that §529 plans with higher fees have more accounts and more assets under management. In short, investors are choosing plans with higher fees, regardless of state tax benefits. These findings are consistent with prior research that investors are willing to use brokers because they reduce investors' information search costs. We find no support for the theory that investors choose plans based upon low fees and state tax subsidies.

This study is the first to examine §529 plan inflows and the choices investors make for these new investments.[4] With limited investment choices and few plan administrators, §529 markets may be inefficient. Many Section 529 plan investors are not tax-savvy consumers and are responding to what may be detrimental marketing information. Policymakers should be aware that when §529 plan contributors forgo state tax deductions and buy fee funds, the federal and state tax subsidies accrue to the mutual fund distributor, rather than to the taxpayer. This research also has implications for proposed tax policies that encourage savings (e.g., Lifetime Savings Accounts, Retirement Savings Accounts, and privatization of Social Security).

BACKGROUND ON §529 PLANS

In 1986, Michigan established the Michigan Education Trust, the nation's first pre-paid tuition program. Michigan did not impose state tax on investment returns and filed suit on behalf of the program investors for a refund of federal income taxes. Although the courts

[4] Prior research modeled §529 asset choices (absent empirical data) and were found to be suboptimal both prior to (Spitzer and Singh 2001) and after the 2001 tax law change (DeGennaro 2004).

initially held for the IRS, the decision was reversed and remanded on appeal. As the lawsuit moved through the courts, several other states introduced pre-paid tuition plans.

Congress responded by enacting Internal Revenue Code ("IRC") §529, which clarified the federal tax treatment of these plans [§529(b)(1)(A)(ii)], in the Small Business Job Protection Act of 1996 (P.L. 104-188). Initially, investments in both pre-paid tuition plans and college savings plans could grow tax-free but were subject to federal income tax upon distribution. The Economic Growth and Tax Relief Reconciliation Act of 2001 (P.L. 107-16) offered several new federal tax benefits. Most importantly, withdrawals used for qualified educational expenses are now tax-exempt at the federal level. Furthermore, §529 plan assets are no longer included in the estate of the donor, nor are they included in the beneficiary's estate unless a distribution is made upon the beneficiary's death. Finally, §529 college savings plan contributions are treated as a completed gift for gift tax purposes, but the contributor still controls the investment and may change beneficiaries or programs. These unique estate and gift tax consequences make §529 plans particularly attractive when compared to custodial accounts (e.g., Uniform Gift to Minors Act (UGMA) or Uniform Transfer to Minors Act (UTMA)), which prohibit the contributor control of assets.

Unlike other tax-subsidized investment vehicles, no income limit exists for §529 plan participation.[5] Furthermore, contributions are effectively unlimited; most states allow contributions until the donee's account balance reaches approximately $250,000.[6] Other tax-

[5] For married couples filing jointly, the Individual Retirement Accounts (IRAs) phase-out begins at $65,000, Roth IRAs at $150,000, and Coverdell Education Savings Accounts at $190,000.
[6] Plan balance limits currently range from $205,175 in Louisiana to $305,000 in Hawaii, South Dakota, and New Jersey. Many states annually adjust the limit.

subsidized investments have quite low contribution thresholds.[7] In addition, donors may contribute $55,000 per donee to §529 plans in a single year without gift tax consequences.[8]

These features combine to make §529 college savings plans a very attractive vehicle for taxpayers providing for a beneficiary's college education. One potential drawback is that, unlike IRA and Coverdell accounts owners, §529 plan contributors and beneficiaries face limited investment options once in the program. However, contributors may elect a tax-free rollover to another §529 plan once a year.

Section 529 college savings plans are codified at the federal level, but states still retain discretion over plan features and state income tax treatment of contributions and distributions. Most states have strategically attempted to create unique plans to distinguish themselves. Competition for investors' assets between plans is fierce as states receive a portion of the management fees from the §529 plan distributor.[9] To discourage investment in out-of-state plans, states reserve certain tax benefits for in-state investment. Because these funds are offered by the state, §529 plans are not subject to the same regulations as other investments, such as mutual funds. Therefore, fees, returns, and other standard disclosures are not required, and §529 brokers are not treated as "securities dealers" subject to NASD and SEC enforcement.

[7] Individuals can contribute a maximum of $2,000 annually per beneficiary to a Coverdell. In 2004, $3,000 is the maximum IRA and Roth IRA contribution limit, but individuals 50 years or older may make an additional $500 "catch-up" contribution.

[8] The $55,000 gift can be spread over five years, although additional gifts in subsequent years will be subject to gift tax.

[9] As states are not required to disclose the portion of annual management fees received from §529 plan investments, the exact number of states receiving this kickback in not available.

Methods of purchasing §529 plans vary by state and by plan. Fourteen states offer direct investment plans that are available only to individuals with some connection to the state (i.e., residency or employment). Thirty-eight states offer direct investment plans open to all investors. Three states have a direct, resident-only plan and a separate direct, non-resident plan. Of these states offering a direct investment option, 25 offer the same plan as an advisor-sold plan. Finally, 16 states offer a separate plan that is only sold through advisors, regardless of residency.

HYPOTHESES DEVELOPMENT

This study tests whether investors are choosing plans offering the greatest estimated return (i.e., lowest fees and greatest tax benefits) or those with lower search costs (i.e., recommended by an advisor or part of a well-known fund family).[10] It is well documented that investors make purchase decisions based upon prior returns (Sirri and Tufano 1998; Chavalier and Ellison 1997; Ippolito 1992). However, §529 plan investors rely upon other information because plan returns were not publicly available and traditional ranking resources (e.g., Morningstar) did not begin §529 plan coverage until the fall of 2003. This paper examines the trade-off between tax and non-tax features in a setting in which traditional ranking resources and historical return data are absent. Specifically, we build on recent literature that examines whether other factors, such as taxes (Barber and Odean 2003; Bergstresser and Poterba 2002), fees (Bergstresser and Poterba 2002; Chordia 1996), and

[10] We recognize that investors have other investment vehicle choices. This paper implicitly assumes that investors have chosen the §529 plan.

costly information searches (Sirri and Tufano 1998; Nanda et al. 2000) affect investors choices.

Section 529 plans are touted because they clearly have unique tax benefits that make them desirable investments for many people (Turgesen 2004). At the federal level, they are similar to a Roth IRA in that the after-tax accumulation per after-tax dollar ($1) invested is:

$$\$1(1+R)^n$$

where R = before-tax rate of return and n=number of time periods between the contribution date and when the distribution is used to pay qualified education expenses. Like the Roth IRA, contributions are not federally tax deductible, but earnings and withdrawals are tax free if used for qualified education expenses.

At the state level, variation in net returns between plans results from differences in fees, state marginal tax rates, and the tax treatment of contributions and withdrawals. Assuming a constant rate of return across states and a state income tax deduction upon contribution, the after-tax accumulation per after-tax dollar invested in an in-state §529 plan becomes:

$$(1/(1-t))(1 + R)^n$$

where t represents the state tax rate. For example, a deductible $10,000 investment, at a five percent state tax rate would equate to a $10,526 non-deductible investment with tax-free growth. During our sample period, no state allows deductions for contributions to out-of-state plans. It follows that return-maximizing investors residing within states subsidizing §529 contributions and distributions would choose an in-state plan, *ceteris paribus*.

To make purchase decisions, investors face a "costly search" process in which information is gathered about tax benefits, fees, plan features, the fund family, and specific investment choices. Investors frequently use rating services (e.g., Morningstar) and financial literature to assist in the investment decision-making process. Fund vendors realize this and respond by incurring considerable expense, generally one-half of total expenses, in marketing efforts directed towards investment consumers (Sirri and Tufano 1998).

The §529 investment choice is classified as a difficult decision under the consumer research framework (Bettman et al. 1991). Specifically, there are many alternatives (currently 80 plans) and plan attributes (over 20 per plan). Further, some plan attributes are difficult for investors to understand (e.g., fee structure) or to assign a value (e.g., age-based versus static-based investment options). Therefore, it is not surprising that a survey of households saving for college reports that 68 percent of §529 consumers relied upon advisor provided information (Investment Company Institute 2003). Investors may be more likely to choose those plans that are more heavily promoted. Marketing effort is proxied by fees (Sirri and Tufano 1998); the more highly marketed funds will have a higher fee expense ratio and greater sales loads. For §529 plans, the more highly marketed funds are those that are only sold through a broker; the direct investment option has lower fees. Brokers may not be disclosing state tax benefits and may be directing investors to out-of-state plans (NASD 2004). Therefore, the competing hypothesis predicts no relationship between tax deductions and accounts as investors choose plans without regard to state tax benefits.

Prior finance literature examines only those investments with return information, therefore, it is unclear if prior results would hold for §529 plan investments. Taxes and fees will decrease investors' realized returns. Therefore, there is reason to believe that rational consumers seeking to maximize expected returns would choose low-fee funds that offer state tax benefits, contrary to the costly search hypothesis discussed above. We test whether a relationship between fees and §529 account inflows exists, without directional predictions.

Because §529 plans are a new form of investment, investors may be more likely to choose plans with highly visible distributors. For example, funds that are part of a large fund family (Elton 2004) or that have a highly rated fund may be more appealing to consumers (Nanda et al. 2001). Jain and Wu (2000) find that mutual fund inflows are positively related to the amount of the fund's advertising and other media exposure.[11] Because of the paucity of §529 plan information during this period, we predict that investors will be predisposed to choosing plans from fund families that are more well-known.

DATA, MODEL, AND VARIABLE DEFINITIONS

Data

To test the hypotheses, we use a proprietary database that includes information on 77 §529 plans offered to the public for the quarters ending December 31, 2001, through September 30, 2003.[12] For each plan, the database contains the total assets under management, the number of accounts by quarter, and the date established. Twenty-nine §529 plans were not operational at the beginning of our data set for one or more quarters. Thus,

[11] Although, Jain and Wu (2000) specifically exclude observations in which the ads do not report past performance, we believe this finding should hold for our data.
[12] Sixteen states have more than one plan.

only 476 possible plan observations exist. In the end, 36 had missing data, and these observations are dropped from our analysis.[13]

We supplement this data with hand-collected material taken from several sources. Information on state tax consequences is gathered from Commerce Clearing House, a commercial tax service. Plan characteristics, such as fees, distribution channels, and investment choices is collected from Savingforcollege.com and checked against fund prospectuses. Distributors' assets under management data are gathered from corporate websites and personal phone calls. State demographics are gathered from the U.S. Bureau of Census. Average tuition is compiled from the U.S. Department of Education's National Center for Education Statistics.

Model

Our empirical analysis is carried out using a panel model with random effects representing each §529 plan across the United States over eight quarters. We define our primary dependent variable as the number of accounts in each §529 plan. Our fund data also include the total assets under management per plan at quarter-end. However, the absence of return data precludes us from isolating inflows from investment appreciation,[14] consistent with prior mutual fund literature (Sirri and Tufano 1998). We use plan assets under management as an alternative dependent measure for sensitivity analysis.

We model the demand for §529 plans by regressing the number of accounts on various characteristics of the plans. In general, investors may choose a plan because of low fees, a

[13] Six observations are missing distributor assets under management, 25 are missing information on distribution channels, and five are missing minimum contribution information.
[14] To the extent returns are correlated with time, the random effects should account for these returns.

favorable impression of the plan manager, the efforts of commissioned sales representatives, tax advantages, and various attractive plan features. Each of these groups of variables is discussed in more detail following the model:

$$\mathbf{ACCT}_{it} = \beta_0 + \beta_1\mathbf{TAX\_DEDUCT}_{it} + \beta_2\mathbf{TAX\_EXEMPT}_{it} + \beta_3\mathbf{FEES}_{it} + \beta_4\mathbf{BROKER}_{it} + \beta_5\mathbf{LENGTH}_{it} + \beta_6\mathbf{STATIC}_{it} + \beta_7\mathbf{MINCON}_{it} + \beta_8\mathbf{DISTRIBUTOR}_{it} + \beta_9\mathbf{YOUNG}_{it} + \beta_{10}\mathbf{PI}_{it} + \beta_{11}\mathbf{TUITION}_{it} \sum\beta_{12\text{-}18}\mathbf{QUARTER}_{t} + \varepsilon_{it},$$

where $ACCT_{it}$ = number of total accounts for plan *i* during time *t*.

TAX_DEDUCT_{it} = state income tax deduction permitted for contributions made to plan *i* during time *t* multiplied by the highest marginal individual income tax rate in the state during time *t*.

TAX_EXEMPT_{it} = dummy variable taking a value of 1 if the state for plan *i* permits an income tax exclusion for distributions made from an out-of-state plan during time *t*; otherwise 0.

$FEES_{it}$ = average expense ratio plus average management fee ratio plus annualized load for plan *i* during time *t*.

$BROKER_{it}$ = dummy variable taking a value of 1 if a non-resident must buy plan *i* from a broker at time *t*; otherwise 0.

$LENGTH_{it}$ = number of quarters plan *i* has been operational at time *t*.

$STATIC_{it}$ = dummy variable taking a value of 1 if plan *i* is static at time *t*; otherwise 0.

$MINCON_{it}$ = minimum annual contribution required by plan *i* during time *t*.

$DISTRIBUTOR_{it}$ = log of dollar amount of assets currently managed by the plan distributor for plan *i* at time *t*.

$YOUNG_{it}$ = number of residents under the age of 19 in plan *i*'s state during time *t*.

PI_{it} = personal income scaled by population in the state for plan *i* during time *t*.

$TUITION_{it}$ = average tuition and fees for public 4-year undergraduate institution in plan *i*'s state during time *t*.

$QUARTER_t$ = dummy variable taking a value of 1 during time *t*; otherwise 0.

ε_{it} = $u_i + w_{it}$ where w_{it} denotes the traditional error term and u_i represents the plan-specific random effect.

Tax Variables

States frequently use state income tax treatment as a carrot and a stick; states may offer tax deductions for investing in the in-state plan while imposing tax on all distributions from out-of-state plans. We include two variables to represent the state-level §529 plan tax treatment. Currently, 25 states and the District of Columbia allow for income tax deductions for all or a portion of contributions to their own state-sponsored §529 plan. However, no state allows deductions for contributions to out-of-state plans. We construct the variable, TAX_DEDUCT, by multiplying the highest annual tax deduction permitted by the state by the highest marginal individual tax rate in each state. During our sample, 20 states offer a deduction that ranges from $1,000 to $20,000 and five allow an unlimited deduction. In general, the allowed deduction is a function of the contributor's tax filing status and the number of beneficiaries. We assume two beneficiaries and an investor who is married and files a joint return. Because the prior literature presents two competing theories, we do not predict the sign on the coefficient for TAX_DEDUCT in advance.

States also vary the treatment on qualified distributions from the plans. In general, states allow for tax exemption only if proceeds are used for qualified educational expenses. Each state, except Alabama, provides an income tax exclusion of qualified distributions made to a resident from an in-state §529 plan. Four states currently tax residents on qualified distributions from out-of-state plans.[15] We include a dummy variable, taking on a value of 1 if the state permits an exclusion for distributions made from the out-of-state §529 plan and a

[15] We recognize another possibility exists for states to tax distributions. Specifically, investors receive distributions from an out-of-state plan and may be subject to tax in the state from which the distribution is made.

value of 0 if no exclusion is permitted. An investor will be less likely to choose the resident state's plan if his or her home state will grant the tax exemption on out-of-state plan distributions; thus, we predict a negative relation between TAX_EXEMPT and ACCT.

§529 Plan Variables

Fees/Marketing

As noted above, each state contracts with a mutual fund company or companies to run its plan and determine both the investment options available to investors and the respective fees that will be charged. The fees vary by plan, by fund manager, and by residency. Dynarski (2004) finds that §529 plan fees are higher on average than the fees for retail mutual funds, IRAs, or Coverdell Education Savings Accounts. There are initial enrollment fees, annual maintenance fees, management fees, and fees for underlying funds. Investors that purchase plans through a broker may also incur a front- or deferred-load, as high as 5.75 percent of the initial investment. Load products represented 20 percent of §529 plan assets in 2002 but grew to 64 percent in 2003 (Korn 2003). Depending on the share class, the advisor investment plans generally have loads and/or higher fees.[16]

Fees reduce fund returns, and conventional wisdom suggests that investors would choose funds with the lowest fees, *ceteris paribus*. However, prior research demonstrates that marketing efforts, proxied by fees, increase flows into mutual funds (Sirri and Tufano 1998; Elton et al. 2004), because such efforts reduce investors' information search costs. Prior

[16] Class A shares have front loads and lower annual expenses than B and C shares. Class B shares have contingent deferred sales charges (CDSC) (i.e., deferred loads) that decline over several years of ownership. Class B shares convert to Class A shares when the CDSC period expires. Class B shares do not offer breakpoints. Class C shares have a short CDSC period, typically less than one year. Class C shares have higher expenses and never convert to Class A (NASD 2003).

research finds that less sophisticated investors are more likely to use brokers than to invest directly (Capon et al. 1996). This reduces investor's costly search. Furthermore, investors using brokers are less price-sensitive (Alexander et al. 1998). We create a variable, FEES, to proxy for the average annual §529 plan cost. FEES is defined as the management fee and average expense ratios added to the annualized load (Sirri and Tufano 1998). The load is annualized by dividing the load expense by six years, the median number of years until the median household saving for college will have a child in college (ICI 2003, fig. 21).[17] Because the prior literature presents two competing theories, we do not predict the sign on the coefficient for FEES in advance.

The lack of historical return data on these or comparable investment vehicles and the absence of traditional investment resources may make §529 investors more prone to relying upon securities dealers' recommendations. However, the added restriction of only being able to participate in a §529 plan through a broker may make that plan less attractive and result in fewer accounts. To test these competing theories, we include a dummy variable, BROKER, which takes a value of 1 if the non-resident investor can only buy the plan from a broker and 0 otherwise.

Investment Choices

We include two variables to address investment differences between plans across time. Initially, states offered one choice: an age-based investment. Investors purchase a fund based upon the age of the beneficiary (i.e., 1-2 years old, 3-4 years old, etc). The fund manager makes the investment allocation more conservative as the beneficiary approaches

[17] Alternatively, the load may be annualized by nine years, the median number of years until the median §529

college by decreasing (increasing) the percentage of stocks (bonds and money market investments) held in the portfolio.

Investment options in §529 college plans now include static investment options. Plans with static investment options allow investors to allocate all or a portion of the investment to a single fund or several funds. For example, Virginia's College American §529 plan has over 70 underlying stock funds and 35 underlying bond funds from which a §529 investor may choose (Morningstar.com accessed 06/19/04). Unlike the age-based investment in which stock and bond allocations are annually adjusted by the fund manager, static investments remain the same unless the investor exercises the annual option to change allocations. We include a dummy variable (STATIC), taking a value of 1 if the plan offers static investment options and 0 otherwise. We include a second investment variable, MINCON, defined as the annual required minimum contribution. A greater minimum contribution should lead to fewer accounts in the §529 plan.

General Investor Awareness

Investors may be more likely to invest in plans with more visible distributors. In addition, investors may have more confidence in plans with larger fund distributors. We proxy general investor awareness of the plan with the size of the fund family and age of the §529 fund (Elton et al. 2004). The size of the plan distributor, DISTRIBUTOR, is the log of the dollar amount of fund family assets under management (Sirri and Tufano 1998). For example, Fidelity, distributor for the Delaware College Investment Program, had $1.2 trillion under management as of 2004 year-end, while UPromise, distributor of Nevada's UPromise College Plan, had $100 million under management. LENGTH is the number of quarters since the plan

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plan investor will have a child in college (ICI 2003, fig. 8).

has been established (Elton et al. 2004). Both DISTRIBUTOR and LENGTH are predicted to have a positive relation with the number of accounts.

Other Control Variables

We include per capita personal income (PI) and the number of residents under the age of 19 (YOUNG) to estimate the local demand for the state's §529 plan. We predict that higher incomes and a younger population will have a positive relation with the number of accounts. We also include the average 4-year undergraduate tuition and fees (TUITION) for public universities within each state. We predict that states with higher tuition and fees will have more §529 plans investors. Finally, we include dummy variables to control for time effects during the eight quarters.

RESULTS

Descriptive Statistics

Descriptive statistics for the dependent and independent measures are presented in Table 1. On average, 47,434 accounts (s.d. = 82,087) exist per plan with a mean asset value of $317,400,000 (s.d. = 583,000,000). On average, these plans are 7.43 quarters old (s.d. = 4.81). Forty-one plans started during this period; 13 plans were operational prior to 2000.

[Insert Table 1 here]

During the eight-quarter time period, notable changes occur. Table 2 provides descriptive statistics for select variables by quarter. On average, all fees increase steadily during this short time. Further, the percentage of funds that can only be purchased through a broker nearly doubled from 17 percent to 32 percent. An examination of TAX_EXEMPT

shows that most states began exempting withdrawals from out-of-state plans beginning in 2002.

[Insert Table 2 here]

Table 3 provides descriptive statistics by account quintile for select variables. On average, the funds with the most accounts have more assets, have been in existence longer, and are part of the largest fund families. Conversely, the funds with the fewest accounts have fewer assets, the shortest tenure, and smallest fund families. Fees are highest for the first quintile, the funds with the fewest accounts. The average fees are 184.7 basis points for this group. This average drops 40 basis points for the next quintile and then continues to rise. With the exception of the smallest plans, fees appear to be higher for those plans with more accounts and assets.

[Insert Table 3 here]

Regression Results

Results from estimating determinants of §529 plans using random effects and OLS are provided in Table 4 with the number of accounts (ACCT) as the dependent variable. The random effects model is preferred, but the OLS results are provided as a robustness check. A random effects model controls for the potential correlation that exists between regressors and unobservable individual effects. The random effects for plan accounts explain approximately 87 percent of the variation in the model, indicating that the unobservable individual effects that differ by states are important determinants of the number of accounts. We use the Hausman (1978) test to examine whether a random effects model is more appropriate than a

fixed effects model and find that the random effects are not correlated with any of the included regressors. The random effects model is preferred, because it provides more efficient estimators and can be used in making predictions. Furthermore, because the random effect is part of the error term, degrees of freedom are not lost during the estimation process. The random effects model and the OLS model results with total value of assets invested (ASSETS) as the dependent variable is reported in Table 5.

[Insert Table 4 and 5 here]

Tax Variables

The sign for the TAX_DEDUCT coefficient is negative and statistically significant. This result indicates that the higher the tax deduction permitted for residents that participate in resident plans, the fewer the number of accounts opened. This is an interesting result, because a tax deduction for contributions has an unambiguous positive effect on the final amount available for education. TAX_DEDUCT is negative for all models but not statistically significant in the ACCT OLS models and in both ASSETS models. In total, these results suggest that tax benefits do not increase the number of §529 plan accounts or §529 plan assets. We test for lower deduction thresholds of $50,000, $20,000, and $10,000 and find similar results. The latter is reported in Table 6, column 1 for sensitivity analysis.[18]

[Insert Table 6 here]

Clearly, the amount contributed to an in-state §529 plan should be affected by the magnitude of the tax deduction. However, it is not clear that a state will have more accounts

[18] If the number of accounts is small, states may provide other incentives to attract §529 plan investors.

as the amount of the possible deduction increases. Therefore, we test the ACCT models with an alternative tax deduction variable definition. DEDUCT_RATE is a dummy variable equal to the tax rate if the state permits a deduction, 0 otherwise. The results are reported in Table 6, column 2. While the sign on DEDUCT_RATE is not significant, other results are similar to those previously reported.

The variable TAX_EXEMPT is not statistically significant in the two random effects models. In the OLS regression, the coefficient is positive. Thus, the prediction that taxing out-of-state plan distributions leads to more in-state plan accounts is not supported. As noted above, most states began exempting all §529 plan distributions during our sample period. Growing state conformity may contribute to the results for this variable. We test an alternative measure of state tax exemption with EXEMPT_RATE. This dummy variable is equal to the state tax rate if the state permits an exclusion, 0 otherwise. Table 6, column 3 reports the insignificant results for EXEMPT_RATE with the remaining variables similar to those previously reported.

Plan-Specific Variables

The sign for the FEES coefficient, one of our main variables of interest, is positive and statistically significant in all the model variations. This indicates that §529 plans with high fees have a greater number of accounts. The results in our baseline model indicate that a 10 percent increase in fees will lead to approximately a 6.5 percent increase in the average number of accounts. To the extent that fees proxy marketing efforts, these findings support the claim that investors are choosing §529 plans with lower search costs. We perform

additional analyze with the fees separated into three components: management fees, expense ratio and loads. Both the expense ratio and the load variables are positive and marginally significant. The remaining variables are similar to the baseline model.

The coefficient for MINCON is negative and statistically significant in the OLS model. Consistent with predictions, plans without minimum annual contributions lead to a greater number of accounts. BROKER and STATIC have negative coefficients but are not statistically significant. Risk preferences may affect investment choice but our sample does not include investment-level data within each §529 plan. STATIC proxies for the perceived riskiness of a §529 plan. We test three additional plan variables that also proxy for risk: AGE_BASED, STOCK, and BOND. AGE_BASED is a dummy variable equal to 1 if the plan offers an age-based portfolio, 0 otherwise. STOCK is defined as the number of underlying stock funds used in the plan by quarter. BOND is defined as the number of underlying bond funds used the plan by quarter. AGE_BASED is not significant but STOCK and BOND coefficients are positive and marginally significant. The results for the remaining variables are similar to those of the baseline model.

We test for general investor awareness of the fund family with several variables. We predict that the more well-known the distributor, the more likely that an investor would choose the plan. The variable DISTRIBUTOR is defined as the log of the plan distributor's total assets under management. This variable is significant in the OLS models with ASSETS as the dependent measure. We tested the robustness of the model by using the number of employees and number of offices as a proxy for the size of the distributor, and find no

significant differences.[19] Because funds in larger families grow more quickly, we also create a dummy variable, LARGE, defined as 1 if the fund is part of a fund family that is larger than the median fund family for that quarter and 0 otherwise (Sirri and Tufano 1998). Substituting LARGE for DISTRIBUTOR does not change the results. A final proxy for awareness is LENGTH, the number of quarters that the plan has been in existence. The positive coefficient for LENGTH is statistically significant in all three models; the longer the §529 plan has been operational, the greater the number of accounts in the plan. This is consistent with the notion that older plans may have greater investor awareness, and investors seeking to reduce their search costs would choose older plans.

As another sensitivity test, we include a variable for media attention, MEDIA, because funds with more media attention grow faster (Sirri and Tufano 1998). MEDIA is defined as the results of a Lexis/Nexis search for references to each fund family between 2001 and 2003 in four financial periodicals and eight newspapers that is weighted by the circulation of the publication.[20] We measure this variable for both the plan distributor and the plan manager, if different. The MEDIA variable is not statistically significant in any regression model.

[19] Because not all §529 plans are distributed and managed by the same firm, we also test the general awareness variables with fund managers size. Substituting the log of the plan manager's total assets under management for those of the distributor does not affect the results.

[20] The periodicals are *BusinessWeek, Consumer Reports, The Economist,* and *U.S. News and World Report*. The newspapers are *The New York Times, The Washington Post, USA Today, Chicago Sun-Times, Financial Times, St. Louis Post-Dispatch, St. Petersburg Times,* and *The Boston Globe.*

Control Variables

In general, §529 plans in states with higher levels of personal income and younger populations have a larger number of accounts and more assets as estimated by all regression models, though only statistically significant in all models.[21] Because investors can choose out-of-state plans, we include TUITION to control for domestic demand. TUITION is only significant in the OLS version. The number of accounts and assets invested in §529 plans is not correlated with the average tuition and fees by state in our sample. We also tested the model with the percentage of the population with bachelor's degrees to capture the demand for college savings. The coefficient was positive in both the random effects and OLS model, and statistically significant in the OLS model. Finally, the time-fixed effects were not significant in any version of the model.[22]

Further Analysis

During our sample time period, 17 states had more than one §529 plan. We recognize that investors may have several in-state §529 plan choices. When we control for this by including the number of plans offered in each state (NUM_PLAN) in the original, plan-level model, the results presented above do not change. The NUM_PLAN coefficient is positive and statistically significant in the OLS model; the sign was not statistically significant in the random effects model.

[21] We also tested the model by scaling ACCT (and ASSETS) by YOUNG. The model performs best when YOUNG is included as a right-hand side variable.
[22] We also ran the model excluding time-fixed effects. No significant differences are noted for both the random effects models and the OLS models.

Section 529 plans vary between states and also between plans within the same state. The model with pooled accounts also serves as a robustness check, though a pooled sample loses important plan variations, such as fees and investment method. The main variable of interest in this pooled model is TAX_DEDUCT because the tax deduction variable does not vary by plan within a given state. We define the fee variable (ST_FEES) as the average fees in each state per quarter. We define ST_LENGTH as the number of quarters the oldest plan has been in existence in the state per quarter. This model excludes the dummy variables STATIC and BROKER and the plan variables DISTRIBUTOR and MINCON because of variations between plans within the state. We present the results of the model using a pooled sample in Table 7. These results show that the tax deduction variable becomes highly significant. However, the fees variable becomes marginally significant which demonstrates that the plan level data is important for analyzing plan level features, such as fees.

[Insert Table 7 here]

CONCLUSION

This paper builds upon prior tax and finance literature by examining the tax and non-tax factors that affect investors' choice of §529 plans. We present two competing theories about investors' choice. The first is based upon profit maximization in which investors choose funds with state tax benefits and low fees. The second posits that investors reduce the costly search process by choosing funds that are more heavily marketed. We find support for the latter theory. The existence of state tax benefits is negatively related to investment. Because we cannot identify in-state and out-of-state investors for each plan, we cannot determine

whether investors are un aware of state tax benefits or are choosing to forgo them by purchasing out-of-state plans. Upon conclusion of the NASD investigation, a future study may compare the plans having a small percentage of in-state investors with the other §529 plans. We find fees positively correlated to the number of accounts, which is consistent with the theory that marketing efforts drive investors to high-fee funds. One limitation of this study is that insufficient information on the risk and returns of the underlying investments precludes us from including them in our model. Thus, future research should examine whether these findings differ as more fund performance information becomes available to investors.

This study's results should be of interest to academics, financial advisors, and policymakers. This study provides further empirical evidence that investors do not appear to be tax savvy or fee sensitive. To the extent that federal tax subsidies are being consumed by the fund managers and the states in the form of excess fees, critics may be justified in calling for §529 plan reform. Voluntary disclosure guidelines were proposed on December 9, 2004 and await approval at the state level. Tax-free distributions of §529 plans expire in 2010 and making these (and other tax reductions) permanent is part of a national debate. The findings of this study also have broader implications as President Bush proposes rolling individual investments into Lifetime Savings Accounts that include many §529 plan features and privatizing Social Security. The manner is which these tax-favored investments will be operationalized is still uncertain. Although IRAs, Roth IRAs, and Coverdell ESAs have lower fees and an unlimited selection of assets, many believe these proposed investment vehicles may take the form of §529 plans. Policymakers should be aware of the inherent §529 problems (i.e., investors are selecting high-fee funds and losing out on state tax deductions) as Congress considers the proposed tax-favored savings programs.

Table 1
Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
ACCT	47,434.00	82,087.00	48.00	478,079.00
ASSETS (in thousands)	317,000.00	583,000.00	1,000.00	4,000,000.00
TAX_DEDUCT	1,240.15	3,801.55	0.00	18,348.00
TAX_EXEMPT	0.85	0.35	0.00	1.00
FEES	1.57	0.85	0.00	3.32
BROKER	0.28	0.45	0.00	1.00
LENGTH	7.43	4.81	1.00	25.00
STATIC	0.75	0.43	0.00	1.00
MINCON	47.99	130.69	5.00	1,000.00
DISTRIBUTOR (in millions)	313,000.00	304,000.00	9.00	1,200,000.00
TUITION	3,818.13	1,186.39	2,070.00	7,754.00
YOUNG	1,261,459.00	1,538,248.00	108,403.00	9,419,970.00
PI	30,204.00	4,330.00	21,849.00	45,164.00

Definitions:

ACCT	=	Number of total accounts for plan *i* during time *t*.
ASSETS	=	Dollar amount invested in plan *i* during time *t*.
TAX_DEDUCT	=	Maximum state income tax deduction permitted for contributions made to plan *i* during time *t* multiplied by the highest individual income tax rate in the state during time *t*.
TAX_EXEMPT	=	Dummy variable taking a value of 1 if the state for plan *i* permits an income tax exclusion for distributions made from an out-of-state plan during time *t*; otherwise 0.
FEES	=	Average expense ratio plus average management fee ratio charged plus annualized load for plan *i* during time *t*.
BROKER	=	Dummy variable taking a value of 1 if a nonresident must buy plan *i* from a broker; otherwise 0.
LENGTH	=	Number of quarters plan *i* has been operational at time *t.*
STATIC	=	Dummy variable taking a value of 1 if plan *i* is static; otherwise 0.
MINCON	=	Minimum annual contribution required by plan *i* during time *t*.
DISTRIBUTOR	=	Log of assets currently managed by the plan distributor for plan *i*.
YOUNG	=	Number of residents under the age of 19 in plan *i*'s state during time *t*.
PI	=	Personal income scaled by population in the state for plan *i* during time *t*.
TUITION	=	Average annual cost of tuition and required fees in the state during time *t*.

Table 2
Descriptive Statistics for Select Variables by Quarter

Variable[1]		4Q01 (n=40)	1Q02 (n=46)	2Q02 (n=50)	3Q02 (n=55)	4Q02 (n=60)	1Q03 (n=64)	2Q03 (n=65)	3Q03 (n=60)
DEPENDENT MEASURES									
ACCT	Mean	32,499	38,025	42,635	44,723	46,803	50,138	53,979	61,744
	(sd)	(52,143)	(62,655)	(69,449)	(75,040)	(80,336)	(87,422)	(96,009)	(105,182)
	Min	48	149	187	240	800	56	317	443
	Max	217,000	287,000	326,000	352,000	399,652	424,450	452,465	478,079
ASSETS	Mean	204,000	248,000	275,000	263,000	304,000	320,000	380,500	468,000
(in thousands)	(sd)	(352,000)	(432,000)	(468,000)	(458,000)	(547,000)	(582,000)	(711,000)	(821,000)
	Min	1,000	1,000	1,000	1,000	1,000	1,000	1,100	2,000
	Max	1,530,000	2,070,000	2,250,000	2,240,000	2,660,000	2,790,000	3,360,000	4,000,000
TAX FACTORS									
TAX_DEDUCT	Mean	1,057	1,360	1,256	1,192	1,079	1,478	1,178	1,276
	(sd)	(3,827)	(4,058)	(3,906)	(3,737)	(35,84)	(4,193)	(3,605)	(3738)
	Min	0	0	0	0	0	0	0	0
	Max	18,348	18,348	18,348	18,348	18,348	18,040	18,040	18,040
TAX_EXEMPT	Mean	0.350	0.848	0.880	0.909	0.917	0.922	0.923	0.917
	(sd)	(0.483)	(0.363)	(0.328)	(0.290)	(0.279)	(0.270)	(0.269)	(0.279)
	Min	0	0	0	0	0	0	0	0
	Max	1	1	1	1	1	1	1	1
PLAN FACTORS									
FEES	Mean	1.441	1.467	1.521	1.583	1.605	1.637	1.622	1.597
	(sd)	(0.792)	(0.849)	(0.861)	(0.859)	(0.864)	(0.867)	(0.869)	(0.812)
	Min	0	0	0	0	0	0	0	0
	Max	2.905	3.108	3.108	3.108	3.108	3.317	3.317	2.905
BROKER	Mean	0.175	0.239	0.240	0.309	0.300	0.313	0.308	0.317
	(sd)	(0.385)	(0.431)	(0.431)	(0.466)	(0.462)	(0.467)	(0.465)	(0.469)
	Min	0	0	0	0	0	0	0	0
	Max	1	1	1	1	1	1	1	1

Table 2: Descriptive Statistics for Select Variables by Quarter - Continued

Variable		4Q01 (n=40)	1Q02 (n=46)	2Q02 (n=50)	3Q02 (n=55)	4Q02 (n=60)	1Q03 (n=64)	2Q03 (n=65)	3Q03 (n=60)
LENGTH	Mean	5.200	5.804	6.360	6.800	7.250	7.844	8.754	9.967
	(sd)	(4.220)	(4.256)	(4.355)	(4.519)	(4.700)	(4.838)	(4.854)	(4.888)
	Min	1.00	1.00	1.00	1.00	1.00	1.00	2.00	3.00
	Max	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00
DISTRIBUTOR (in millions)	Mean	373,000	326,000	310,000	296,000	297,000	308,000	292,000	325,000
	(sd)	(337,000)	(299,000)	(294,000)	(287,000)	(302,000)	(314,000)	(294,000)	(319,000)
	Min	110	110	110	110	100	9	14	20
	Max	1,200,000	1,020,000	1,020,000	1,020,000	1,100,000	1,200,000	1,100,000	1,200,000
CONTROL VARIABLES									
YOUNG	Mean	1,251,518	1,226,662	1,213,296	1,296,047	1,216,462	1,276,162	1,260,757	1,333,272
	(sd)	(1,625,014)	(1,527,985)	(1,480,848)	(1,585,233)	(1,540,744)	(1,538,612)	(1,531,837)	(1,581,126)
	Min	124,234	123,167	123,167	123,167	109,544	108,403	108,403	108,403
	Max	9,355,719	9,375,121	9,375,121	9,375,121	9,375,121	9,419,970	9,419,970	9,419,970

[1]See Table 1 for variable definitions.

Table 3
Descriptive Statistics for Select Variables by Account Quintile

Variable[1]	ACCT		ASSETS		FEES		LENGTH		DISTRIBUTOR OF ASSETS (In Millions)	
Quintile	**Mean**	**Sd**	**Mean**	**sd**	**Mean**	**sd**	**Mean**	**sd**	**Mean**	**sd**
1	1,577	813	9,364,773	5,882,075	1.847	0.725	4.420	3.476	225,600	235,000
2	6,904	2,423	39,026,136	22,446,710	1.432	0.970	6.000	3.968	215,000	233,900
3	17,380	4,200	98,042,045	46,255,464	1.471	0.836	7.261	4.504	289,500	306,700
4	40,376	10,307	252,000,000	107,300,000	1.545	0.868	8.466	5.287	299,900	302,500
5	170,931	117,012	1,189,000,000	839,100,000	1.553	0.759	11.023	3.898	534,800	319,600
Average	47,434	82,087	317,000,000	583,000,000	1.570	0.845	7.434	4.808	313,000	304,000

[1]See Table 1 for variable definitions.

Table 4
Regression Results of Accounts

$$ACCT_{it} = \beta_0 + \beta_1 TAX\_DEDUCT_{it} + \beta_2 TAX\_EXEMPT_{it} + \beta_3 FEES_{it} + \beta_4 BROKER_{it} + \beta_5 LENGTH_{it} + \beta_6 STATIC_{it} + \beta_7 MINCON_{it} + \beta_8 DISTRIBUTOR_i + \beta_9 YOUNG_{it} + \beta_{10} PI_{it} + \beta_{11} TUITION + \sum \beta_{12\text{-}18} QUARTER_t + \varepsilon_{it},$$

	Predicted	Random Effects			OLS		
Variable[1]	Sign	Estimate	z-score		Estimate	t-value	
INTERCEPT		-184,196.70	-2.05	**	-272,051.50	-6.30	***
Tax Factors:							
TAX_DEDUCT	?	-2.42	-1.72	*	-0.64	-0.70	
TAX_EXEMPT	-	-3,668.36	-0.53		17,324.66	1.59	
Plan Factors:							
FEES	?	25,933.04	2.26	**	31,092.60	5.82	***
BROKER	?	-13,338.15	-0.91		-3,152.67	-0.33	
LENGTH	+	6,049.75	3.77	***	6,318.33	9.51	***
STATIC	+	-769.84	-0.09		-9,997.42	-1.3	
MINCON	-	-24.38	-0.34		-16.95	-0.65	
DISTRIBUTOR	+	3,421.84	1.05		3,660.79	2.40	**
Control Variables:							
YOUNG	+	0.01	1.84	*	0.01	5.41	***
PI	+	1.27	0.70		2.65	2.97	***
TUITION	+	0.96	0.28		7.83	2.47	***
adj. R^2		30%			32%		

***, **, * represent significance at p<.01, .05, and .1, respectively.
[1]See Table 1 for variable definitions.

Table 5
Regression Results of Assets

$$ASSET_{it} = \beta_0 + \beta_1 TAX\_DEDUCT_{it} + \beta_2 TAX\_EXEMPT_{it} + \beta_3 FEES_{it} + \beta_4 BROKER_{it} + \beta_5 LENGTH_{it} + \beta_6 STATIC_{it} + \beta_7 MINCON_{it} + \beta_8 DISTRIBUTOR_i + \beta_9 YOUNG_{it} + \beta_{10} PI_{it} + \beta_{11} TUITION + \sum \beta_{12\text{-}18} QUARTER_t + \varepsilon_{it},$$

	Predicted	Random Effects		OLS	
Variable[1]	Sign	Estimate	z-score	Estimate	t-value
INTERCEPT		-1,450,000,000.00	-2.05 **	-1,990,000,000.00	-6.30 ***
Tax Factors:					
TAX_DEDUCT	?	-12,123.68	-1.14	-8,010.52	-1.20
TAX_EXEMPT	-	-17,000,000.00	-0.32	83,000,000.00	1.03
Plan Factors:					
FEES	?	165,000,000.00	1.94 **	229,000,000.00	5.82 ***
BROKER	?	-87,900,000.00	-0.79	-73,800,000.00	-1.06
LENGTH	+	40,200,000.00	3.42 ***	41,300,000.00	8.45 ***
STATIC	+	-41,200,000.00	-0.60	-125,000,000.00	-2.22 **
MINCON	-	-160,287.60	-0.31	-127,783.90	-0.67
DISTRIBUTOR	+	30,300,000.00	1.27	33,900,000.00	3.01 ***
Control Variables:					
YOUNG	+	-17,284.70	-0.66	50.61	3.02 ***
PI	+	14,227.09	1.05	18,283.23	2.78 ***
TUITION	+	4058.00	0.97	48,637.07	2.08 **
adj. R^2		26%		26%	

***, **, * represent significance at p<.01, .05, and .1, respectively.
[1]See Table 1 for variable definitions.

Table 6
Regression Results of Accounts – Sensitivity Tests

		Limited Tax Deduction	Rate Deduction Dummy	Rate Exempt Dummy
Variable	**Predicted Sign**	**Coefficient (z-score)**	**Coefficient (z-score)**	**Coefficient (z-score)**
INTERCEPT		-183,849.00 (-2.07)**	-186,696.80 (-2.15)**	-184,798.40 (-2.05)**
Tax Factors:				
TAX_DEDUCT	?	N/A	N/A	-2.44 (-1.7)*
DEDUCT10	?	-2.17 (-.19)	N/A	N/A
DEDUCT_RATE	?	N/A	10,922.22 (0.18)	N/A
TAX_EXEMPT	-	-3,565.38 (-0.19)	-3,623.74 (-0.52)	N/A
EXEMPT_RATE	-	N/A	N/A	1,782.04 (0.03)
Plan Factors:[1]				
FEES	?	22,501.37 (2.02)**	22,584.74 (2.07)**	25,764.91 (2.24)**
BROKER	?	-11,646.50 (-0.80)	-11,208.43 (-0.77)	-13,397.74 (-0.91)
LENGTH	+	6,067.63 (3.84)***	6,081.53 (3.94)***	6,009.78 (3.74)***
STATIC	+	197.32 (.02)	226.86 (0.03)	-360.12 (-0.04)
MINCON	-	-17.37 (-.25)	-16.31 (-0.24)	-25.07 (-0.35)
DISTRIBUTOR	+	2,785.42 (.87)	2,729.41 (0.88)	3,503.01 (1.08)
Control Variables:[1]				
YOUNG	+	0.01 (1.88)*	0.01 (1.94)**	0.01 (1.86)*
PI	+	1.84 (1.03)	1.94 (1.11)	1.20 (0.66)
TUITION	+	0.81 (.24)	0.87 (0.26)	0.78 (0.23)
adj. R^2		31%	31%	30%

Table 6: Regression Results of Accounts – Sensitivity Tests - Continued

***, **, * represent significance at p<.01, .05, and .1, respectively.
[1]See Table 1 for variable definitions.

Definitions:

TAX_DEDUCT	=	Maximum state income tax deduction permitted for contributions made to plan *i* during time *t* multiplied by the highest individual income tax rate in the state during time *t*.
DEDUCT10	=	State income tax deduction permitted for contributions made to plan *i* during time *t* and limited to $10,000 multiplied by the highest individual income tax rate in the state during time *t*.
DEDUCT_RATE	=	Highest individual income tax rate in the state during time *t* multiplied by a dummy value of 1 if the state for plan *i* permits an income tax deduction for contributions made to the plan; otherwise 0.
TAX_EXEMPT	=	Dummy variable taking a value of 1 if the state for plan *i* permits an income tax exclusion for distributions made from an out-of-State plan during time *t*; otherwise 0.
EXEMPT_RATE	=	Highest individual income tax rate in the state during time *t* multiplied by a dummy value of 1 if the state for plan *i* permits an income tax exclusion for distributions made from an out-of-state plan during time t; otherwise 0.

Table 7
Regression Results for Accounts - Pooled State Sample

$$ST\_ACCT_{it} = \beta_0 + \beta_1 TAX\_DEDUCT_{it} + \beta_2 TAX\_EXEMPT_{it} + \beta_3 ST\_FEES_{it} + \beta_4 ST\_LENGTH_{it} + \beta_5 YOUNG_{it} + \beta_6 PI_{it} + \beta_7 TUITION + \sum \beta_{8\text{-}14} QUARTER_t + \varepsilon_{it},$$

		Random Effects		OLS	
Variables	**Predicted Sign**	**Coefficient**	**z-score**	**Coefficient**	**t-value**
INTERCEPT		-125,042.00	-1.56	-204,837.90	-6.29***
TAX_DEDUCT	?	-4.71	-3.71***	-0.14	-0.13
TAX_EXEMPT	-	-6,378.10	-1.15	26,419.18	2.13**
ST_FEES	?	31,811.48	1.76*	33,937.68	5.15***
ST_LENGTH	+	7,743.81	3.08***	8,303.03	9.40***
YOUNG	+	0.01	1.94**	0.02	7.01***
PI	+	-0.01	0.00	2.71	3.01***
TUITION	+	14.36	2.21**	8.86	2.61***
adj. R^2		34%		41%	

***, **, * represent significance at p<.01, .05, and .1, respectively.

Definitions:

ST_ACCT	=	Number of total accounts for state *i* during time *t*.
ST_ASSETS	=	Dollar amount invested in state *i* during time *t*.
TAX_DEDUCT	=	Maximum state income tax deduction permitted for contributions made to plans in state *i* during time *t* multiplied by the highest individual income tax rate in the state during time *t*.
TAX_EXEMPT	=	Dummy variable taking a value of 1 if state *i* permits an income tax exclusion for distributions made from an out-of-state plan during time *t*; otherwise 0.
ST_FEES	=	Average expense ratio and management fee ratio charged and annualized load for state *i* during time *t*.
ST_LENGTH	=	Number of quarters any plan is operational in state *i* at time *t*.
YOUNG	=	Number of residents under the age of 19 in state *i* during time *t*.
PI	=	Personal income scaled by population in state *i* during time *t*.
TUITON	=	Average annual cost of tuition and required fees in state *i* during time *t*.
QUARTER	=	Dummy variable taking a value of 1 during time *t*; otherwise 0.

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