

Examining Financial Behavior in Special Purpose Entities

Robert J. Eger III
Florida State University

This paper examines the financial behavior of public agencies, particularly public transportation special purpose entities. Considering the corporate-like structure of special purpose entities, the study expects public transportation special purpose entities to display evidence of the pecking order approach to financing decisions, to engage in moral hazard behavior perpetuated by bailout anticipation, to respond to market signals, and to exhibit restraint in their issuance of debt through market discipline. Overall, the empirical results provide mixed evidence that special purpose entities display market-based financial discipline in their issuance of debt.

INTRODUCTION

For much of US history, Americans believed that the appropriate government fiscal conduct was a balanced budget. Borrowing was to be avoided, with debt perceived as a threat to the solvency of government and its citizens. This ideal was frequently violated with the federal and state governments borrowing to build roads and turnpikes, as well as other transportation needs (Clingermyer and Wood, 1995). Nevertheless, the ideal of balanced budgets was widely held by the public. Occasional defaults by state and local governments served to strengthen that sentiment and to motivate support for state constitutional restrictions upon debt financing during the twentieth century.

Today, deficit financing by the US federal government has become expected and projected to be \$1.5 trillion in fiscal year 2010, or about \$0.41 of every \$1 of spending (CBO 2010). State and local government borrowing has also grown. The majority of the growth in sub-national debt since the 1960s has been in the form of non-guaranteed debt (Regens and Lauth, 1992). Increases in non-guaranteed debt, debt obligated outside of the full faith and credit of the state or local government can be partially attributed to the proliferation of special purpose entities (Eger, 2006; Mitchell, 1999) State and local governments create special purpose entities to increase debt capacity (Axelrod, 1992). Therefore, the issuance of debt is a focal point for the creation of special purpose entities.

Theoretically, special purpose entities are like individuals and firms; they would like to run up unlimited debts and never repay them, if they could do so without penalty (Nicholson, 1995). As such, there are mechanisms, both in the legal system and in the financial system itself, designed to ensure that most borrowers do ultimately repay their debts. Some of this discipline is market based and results from the behavior of the lenders themselves. As a borrower's debt achieves high levels that might not be serviced, lenders insist on an increased interest rate spread to compensate for the higher default risk (Lamb and Rappaport, 1995). Eventually, a point is reached in which compensation for the default risk cannot be met through interest rates, and the borrower is excluded from any further credit (Livingston, 1996). While this market mechanism is certainly not flawless, it appears to work in general, as seen in the

default rates of both municipal securities and corporate securities, with the ten year default rate from 1970 to 2006 at about 0.065 percent for all investment rated municipal bonds and the ten year default rate at about 2.089 percent for all investment rated corporate bonds (Moody's Public Finance Credit Committee, 2007). If it did not, this borrowing and lending simply could not take place. Yet, there are some notorious counterexamples, such as the savings and loan crisis in the United States and the Orange County, California bankruptcy and General Motors Corporation, which illustrate the enormous potential costs to society when financial discipline is undermined.

Consideration of the financial discipline of public agencies is of critical importance when the agency is entrusted the task of infrastructure provision, because enabling governments often heavily subsidize these types of agencies. Scholars such as Axelrod (1992) have expressed concerns that quasi-governmental entities lack a response to market signals similar to those facing private corporations. In turn, this behavior potentially threatens the financial stability of these public agencies. The purpose of this paper is to examine the financial behavior of public agencies, particularly public transportation special purpose entities, to determine if these entities exhibit market based financial discipline similar to that of private corporations. Considering the corporate-like structure of special purpose entities, the expectation is that public transportation special purpose entities will display evidence of the pecking order approach to financing decisions and exhibit restraint in their issuance of debt through market discipline.

CAPITAL STRUCTURE

Capital structure is based on the relative mix of debt and equity securities integrated into the long-term financial structure of a firm (Megginson, 1997). In the extant literature, there are two competing theoretical explanations for how firms trade-off the three components of capital structure: internal funds, debt and equity. Although these two competing explanations may or may not be mutually exclusive, the literature has treated them as competing theories. The static trade-off theory suggests that each firm strives to achieve an optimum debt ratio, which is determined by balancing the benefit of interest deductions from the use of debt against the disadvantage of bankruptcy costs (Modigliani and Miller, 1958). The pecking order theory, developed by Myers (1984), views a corporation's debt level as the outcome of a series of financing decisions, rather than the achievement of an explicitly targeted optimum. This approach assumes that corporate use of internal funds is generally less expensive than debt financing (Myers, 1984). In the pecking order theory, regardless of the managers' ownership stake in the firm, managers choose the level of capital expenditures that maximizes the wealth of current shareholders. This results in managers explicitly relying on internal cash flow for financing due to information asymmetries between themselves and potential new shareholders (Griner and Gordon, 1995; Strong, 1998). As a result, the pecking order theory suggests that firms first use internal funds as a financing source because of the lower relative cost, use debt financing second, and finally use equity financing as a last resort. According to this view, investors will be wary of firms that finance projects using external sources of cash, because only managers who knew the firm was overvalued would choose to do so. To protect themselves, lenders and equity purchasers will demand a premium for supplying capital. However, given that creditors have a better claim on a firm's assets than equity holders; firms can reassure them with a lower premium. Hence the pecking order: firms will prefer to finance projects with internal funds first, debt second, and equity as a last resort.

Research on corporate financing decisions has suggested that the pecking order theory is superior to the static tradeoff theory in terms of explaining observed capital structure changes (Megginson, 1997). Shyam-Sunder and Myers (1999) modeled both the pecking order theory and the static trade-off theory of capital structure to examine the effect of firm deficit (a measure of exhausted internal funding) on change in debt. Overall, Shyam-Sunder and Myers (1999) found that the pecking order theory offers a superior explanation of the actual financing choices of firms in terms of both time-series explanatory power and statistical power. Graham and Harvey (2001) used a field survey to investigate whether firm behavior follows the pecking order theory. The survey results suggest that if Chief Financial Officers (CFOs) have

insufficient internal funds, the lack of internal funds is a moderately important factor in their decision to issue debt. This finding also is consistent with the theoretical underpinnings of the pecking order theory.

Both theoretical and empirical research on the effects of taxes on capital structure also supports the advantage of the pecking order theory for explaining corporate financing decisions. DeAngelo and Masulis (1980) modeled the effect of non-debt tax shields on capital structure. In effect, the authors extended Miller's (1977) work by introducing non-debt corporate tax shields, such as depreciation deductions and investment tax credits, into Miller's model. DeAngelo and Masulis (1980) concluded that optimal debt ratios do exist for firms, which refutes Miller's theory that capital structure is irrelevant. Consistent with the pecking order theory, much of the empirical research finds that firms with a zero tax rate or firms close to tax exhaustion are less likely to utilize debt financing (Mackie-Mason 1990, Dhaliwal, Trezevant, and Wang 1992 and Graham 1996). In addition, Graham (2000) examined firm-level financial statement data and found that the corporate tax benefit of debt outweighs the personal tax disadvantage of debt for most firms. Kemsley and Williams (2001) further extended Miller's (1977) theoretical model by imposing a condition requiring firms to pay out accumulated earnings as taxable dividends within a finite time horizon. Kemsley and Williams' (2001) model suggests that internal funds, debt, and new equity (primary stock offerings) should be treated as three distinct sources of capital. This implies that the important trade-off for firms is whether to issue debt or use internal funds, because issuing external equity and paying the proceeds out as a dividend distribution from internal equity triggers a tax on dividends. This model provides further support for the pecking order theory of corporate capital structure in which firms choose between internal funds and debt and only utilize equity as a last resort. Considering the corporate-like structure of special purpose entities, total debt and debt capacity should follow the same theoretical premise used to explain the capital structure of private corporations. In particular, special purpose entities should display evidence of the pecking order approach with respect to their debt financing decisions.

Legislative Structure of Special Purpose Entities

The distinguishing characteristic of a corporation is its status as a separate legal entity. As outlined in Eger (2006), a corporation is autonomous from its owners and managers and its structure encompasses a number of legal provisions. Special purpose entities are unique from other public agencies because they exhibit all of these distinct characteristics of a corporation. Special purpose entities are established outside of the traditional government structure to provide self-supporting or revenue-producing public goods and services, which were often undertaken by private enterprises prior to the establishment of special purpose entities (Eger, 2006). Although a special purpose entity is wholly owned by the establishing government and its mission and power is defined by the enabling legislation, a special purpose entity is legally distinct from the establishing government and its method of operation for achieving its mission is beyond government control and the regulations and procedures typically applied to traditional government service organizations. Special purpose entities have autonomous governing boards that are either elected or appointed and the power to hire and fire employees, including a manager or chief executive officer. These entities generate, manage, and report their own finances with budgeting and accounting systems developed according to the guidelines set forth by the Financial Accounting Foundation. In addition, special purpose entities have the ability to issue debt leveraged against their own assets and earning power (not the full faith and credit of the establishing government) and to charge fees and rents for services rendered (Eger, 2006). Overall, these entities are self-governing and self-supporting with financial resources and obligations that are entirely distinct from the establishing government.

Most special purpose entities that provide public transportation services, which are the focus of this study, exhibit these distinguishingly corporate characteristics. Public transportation special purpose entities are established to provide the market-oriented services of transit operations and transportation infrastructure, particularly mass public transit. These public transportation special purpose entities have an oversight board. These entities have the right to adopt a corporate name, make their own by-laws, and establish their own offices. In addition, public transportation special purpose entities can file lawsuits against other entities and can be sued in their own entity name. Most importantly, these entities have the

power to generate funds from private money markets free from the political influences often exerted over government agencies (Mitchell, 1991; Doig, 1983; Smith, 1974; Walsh, 1978).

Capital Structure of Special Purpose Entities

Although public transportation special purpose entities are theoretically corporate in structure, using corporate debt theory to examine the financial behavior of these entities requires a modification to the pecking order theory of capital structure. Public transportation special purpose entities are not publicly traded and therefore cannot rely on equity as a financing mechanism. However, since special purpose entities are legislatively established as corporations, we can expect these entities to resemble private corporations with respect to debt financing decisions for capital investments with equity excluded from consideration. If the pecking order theory is applicable for explaining the financing decisions of special purpose entities, then public transportation entities will finance their capital projects with internal sources of revenue first and with debt second. In other words, these entities should first utilize a pay-as-you-go financing strategy, which would be supported through collected user fees and taxes, and utilize debt instruments once internal resources have been exhausted.

H₁: The greater the amount of internal revenue, the lower the amount of debt issued.

FINANCIAL DISCIPLINE

To determine if public transportation special purpose entities display market based financial discipline similar to that of private corporations, an application to special purpose entities of borrowing restraint exhibited in response to market signals is offered. In public transportation special purpose entities debt is recognized in the issuance of revenue bonds and moral obligation bonds, which have increased exponentially when compared to general obligation bonds (Axelrod 1992). General obligation bonds have a guaranteed repayment by the full faith and credit of the state. In most states, these are issued by the state government only and not by special purpose entities. Although some special purpose entities are allowed the convenience of collecting tax revenue, no independent special purpose entity has the right of obligating state government credit.

Similarly, moral obligation bonds appear to have the features of general obligation bonds; however, they are bonds with a requirement that the special purpose entity have, on hand at all times, a reserve sufficient enough to pay one year's principal and interest on the outstanding bonds. If the reserve amount should fall short of this requirement, the governor of the state in which the special purpose entity is located would recommend to the legislature that the state itself replenish the reserve. This "moral obligation" can be perceived as a credit enhancement to the special purpose entity's bond issuance. As argued by Axelrod (1992) this may be seen as unqualified trickery. The "trickery" is that no legislative body can bind future legislative bodies through recommendation to appropriate funds for a debt service reserve without a legislative act or statutory law.

The most common type of bond issued by special purpose entities is a revenue bond. This bond is issued with a revenue stream of payment for the bond principal and coupon (Fabozzi, Fabozzi, and Feldstein, 1995). The revenue stream is usually composed of fees, charges, subsidies, or a special tax to financially support the bond. Since the tax revolts of the 1970s, revenue bonds have been the primary instrument for special purpose entity debt issues. As of 1990, special purpose entities had issued \$601.9 billion in revenue bond debt (Axelrod 1992). This debt burden among special purpose entities continues to increase as physical capital assets, such as transit facilities, continue to increase throughout the United States.

Restraining Financial Behavior Through Market Discipline

For market-based financial discipline to be effective in restraining borrowing--whether the borrower is a private or public entity--four essential conditions must be met. First, financial markets must be reasonably open, so borrowers do not face a captive market. That is, lenders must have the option of

taking their money elsewhere if a particular borrower's creditworthiness comes into question (Fabozzi et al. 1995).

Second, information pertaining to the borrower's creditworthiness, such as total outstanding bonds to income ratios, must be available to prospective lenders to enable them to discriminate among more or less creditworthy borrowers. In the absence of such information, such as in the municipal bond market, borrowers may be able to incur debts that they cannot service; there is also the danger of transmittal effects, where otherwise creditworthy borrowers are excluded from the market because they share some characteristics with other debtors that have defaulted. This was seen in the municipal bond market with the Orange County bankruptcy filing, when other California counties and cities faced re-evaluation of their debt issues due to a similarity in characteristics with Orange County. These first two conditions – the openness of markets and the creditworthiness of borrowers – are considered met when special purpose entities can purchase debt independent of their enabling governments.

Third, for market-based financial discipline to be effective in restraining borrowing there must be no anticipation of a bailout if the borrower cannot service its debts. Bailouts are the Achilles heel of market discipline; they free borrowers and lenders from the consequences of their actions. The problem of bailouts is a difficult one, since ex post there are often good reasons for a bailout. For example, bailouts can be useful for protecting unfortunate bondholders, or to prevent the potentially enormous disruptive consequences for the financial system resulting from the bankruptcy of a state or local government agency. Ex ante, though, the promise of a bailout leads to a moral hazard problem: it reduces the incentive for lenders to monitor the borrower's behavior. Further, this behavior may not be considered in lending decisions and could potentially reduce the borrower's incentive to maintain financial solvency. In effect, the anticipation of a bailout might persuade the borrower to incur debt levels that are unsustainably high. In the case of public transportation entities, which are often heavily subsidized by their enabling and other governments, greater financial assistance afforded to these entities might transpire into higher debt levels as a result of moral hazard behavior perpetuated by the anticipation of a bailout.

H₂: The higher the reliance on financial assistance from other governments, the higher the amount of debt issued.

Fourth, the borrower must respond to market signals, although response to market signals is not strictly necessary for market based financial discipline to be effective in restraining borrowing. For example, if a borrower continued along an unsustainable path of increasing indebtedness, rational lenders would likely impose discipline upon the borrower by ultimately excluding the borrower from further lending. This is a severe form of discipline and is commonly only associated with a financial crisis.

One signal of how a borrower's creditworthiness is viewed by the market is the interest rate lenders demand for supplying capital to the borrower. Market-based financial discipline requires that interest rate spread reflects differences in credit risk associated with different degrees of fiscal probity (Fabozzi et al., 1995). Market signal response involves the borrower exhibiting self-control over excessive spending during times of widening interest rate spreads. As interest rates rise, the use of debt should decline because it becomes a more expensive financing mechanism relative to other costs of capital. In some instances, borrowers might anticipate the widening interest rate spread to proactively remedy the fiscal imbalance before it undermines their credit rating. In the case of public transportation special purpose entities, measuring market signal response is a difficult task because these entities provide a form of public good that is difficult to price. However, municipal bond investors should signal transportation entities when their debt exceeds market capacity; the interest rate spread that is associated with the amount of borrowing should be reflected in their cost of capital and their total debt accumulated. With a higher level of outstanding debt, these entities should exhibit a greater response to market signals, which would be reflected by an inverse relationship between their cost of capital and issuance of debt.

H₃: The higher the interest cost, the lower the amount of debt issued.

DATA AND VARIABLES

Financial data on debt and other revenue for transportation special purpose entities is not directly available. Therefore, combinations of two data sources are used to examine the financial behavior of these entities. The first source of data is the U.S. Census Bureau Census of Governments from 1997-2006. Although the comprehensive Census of Governments occurs every five years, the U.S. Census Bureau samples special purpose entities for the non-census years.

In this data, special purpose entities are identified through the nomenclature “special district governments.” As defined by the U.S. Census Bureau, special district governments are independent, special purpose governmental units that exist as separate entities with substantial administrative and fiscal independence from general-purpose governments. To be identified as a special district government, rather than be classified as a subordinate governmental agency, an entity must possess three attributes—existence as an organized entity, governmental character¹ and substantial autonomy.² The Census of Governments data was primarily used to assess the financial status of the transportation special purpose entities. The second data source consists of the National Transportation Data Base (NTD) provided by the U.S. Department of Transportation Federal Transit Administration. This database includes data pertaining to all transportation entities, which includes special districts as defined by the U.S. Census, and subordinate agencies of state and local governments. This data source was primarily used to assess population served, density, board membership, and passenger usage for the transportation special purpose entities. All revenue and spending data are in 1997 constant dollars and per capita served.

To investigate the proposed hypotheses, all transportation special purpose entities identified by the U.S. Census as special districts, with service populations of at least 50,000, and sampled during the entire time period 1997-2006 were included in the analysis.³ These criteria yielded a sample size of 70 transportation special purpose entities, which represent 25% of all mass transit entities reported in the 1997 Census of Governments.⁴

Table 1 provides a description of all variables included in the analysis, as well as the hypothesized effect of each independent variable upon the dependent variable. The dependent variable is the total amount of debt outstanding at the end of each fiscal year during the time period studied. The independent variables of total cash and securities flow and own-source revenue are used to test the first hypothesis that transportation special purpose entities exhibit the pecking order approach to their financing decisions, whereby a greater level of cash flow and revenue generated from internal sources will lead to a decreased amount of debt issued. To examine the second hypothesis that a greater reliance upon financial assistance from other governments will influence a transportation special purpose entity to issue higher amounts of debt due to an anticipation of bailout, the total amount of subsidies is determined for each year. The independent variable of interest rate is used to assess the third hypothesis that a higher cost of capital will decrease the amount of debt issued by a transportation special purpose entity because of its higher response to market signals. The findings related to the last two hypotheses will provide a determination of whether transportation special purpose entities exhibit restraint in their issuance of debt through market discipline. The remaining variables serve as control variables for the empirical model.

METHODOLOGY

The data collected for this analysis includes annual observations of transportation special purpose entities over a ten-year time period. Time series cross-sectional (TSCS) data challenge several of the assumptions of regression analysis, but can still produce accurate estimates if certain potential problems are addressed. To ensure that the methodological issues are taken into account prior to the analysis, the data were tested for heteroscedasticity, moving average, and contemporaneous spatial correlation. The tests indicated that both heteroskedasticity and contemporaneous spatial correlation were present. The results of a Durbin-Watson test indicated that first order autocorrelation was also present in the data. The estimation methods used for statistical analysis are first difference estimation which is very similar to fixed effects panel estimation for β_2 and panel corrected standard errors estimation (PCSE) with a

first-order autoregressive term. The choice of these two estimation techniques is not arbitrary here. Commonly, the choice of method for panel data is a fixed effect estimator. Since two of the key control variables—the appointed governing body and the ability to tax—do not vary much over time, fixed effects estimation leads to imprecise estimates. This control variable outcome leads to offering the first difference model, assuming a random walk, and the autoregressive estimator. The assumption of both techniques are similar and tests of the error component were marginal ($p < .055$) on the random walk assumption. Both estimation techniques have controlled for potential correlation between the unobserved effects such as managerial ability and quality, by including dummy variables for the each transit special purpose entity. Dummy variables are also included for each year under study to allow for exogenous effects of time.

TABLE 1
VARIABLE DESCRIPTIONS AND HYPOTHESIZED EFFECTS

<i>Variable</i>	<i>Description</i>	<i>Hypothesized Effect</i>
Debt Issued	Total amount of debt issued for the fiscal year per capita served	
<i>Independent Variables</i>		
Total Cash & Securities	Total flow cash and securities per capita served	Negative
Own Revenue	Revenue generated from own sources per capita served	Negative
Subsidies	All subsidies including intergovernmental revenue from all levels of government per capita served	Positive
Interest Rate	Interest expense/total debt outstanding	Negative
<i>Control Variables</i>		
Debt Service Fund	Dichotomous variable indicating the presence of a debt service fund	
Tax Receiver	Dichotomous variable indicating revenue generated from taxation	
Density	Population served/square miles served	
Appointed Board	Dichotomous variable indicating all board members are appointed	

DESCRIPTIVE STATISTICS

The descriptive statistics are offered in Table 2. The average for debt issued across the time period is \$6.38 per person in the service area. Over the entire time period subsidies is the largest average revenue sources at about \$70 per person in the service area, with own source revenue from fees, charges, and taxes at about \$56 per person in the service area. The average interest rate on long-term debt over the time period is 2.6%, however the standard deviation is 4.4% indicating that spread of the interest rate is quite large. Looking at the control variables, about 14% of the transportation special purpose entities report funds within a debt service fund, 39% receive tax revenues, and about 83% have appointed oversight boards.

TABLE 2
DESCRIPTIVE STATISTICS

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>
Debt Issued	6.383	31.927
Total Cash & Securities	45.508	192.603
Own Revenue	55.515	83.414
Variable	Mean	Standard Deviation
Subsidies	69.625	92.626
Interest Rate	0.026	0.044
<i>Control Variables</i>		
Debt Service Fund	0.137	*
Tax Receiver	0.393	*
Density	2264.926	1674.52
Appointed Board	0.829	*
N = 700 (i = 70; t = 10)		
* Denotes dichotomous variable where standard deviation lacks statistical meaning.		

REGRESSION RESULTS

The results of the regression estimates are offered in Table 3. With the exception of interest rate in the first difference model, Table 3 shows that all of the variables of interest are statistically significant. Since the variable interest rate has the correct sign in both models but is insignificant in the first difference model, support for the third hypothesis that a higher cost of capital will decrease the amount of debt issued by transportation special purpose entities is inconclusive. This finding suggests that interest rate spreads are very sensitive within the models and that no conclusion may be drawn. Interest rates are a critical market indicator that should alert debtors when their creditworthiness becomes questionable. The inconclusive finding is important, because it implies that this market signal may or may not be taken into consideration by debt issuing special purpose entities.

Why might a borrowing special purpose entity fail to respond to market signals? Although special purpose entities are legally structured like private corporations, these entities also exhibit characteristics of government departments and non-profit agencies (Mitchell, 1991). As such, concern has been raised that these quasi-governmental entities lack a response to market signals similar to those facing private corporations (Axelrod, 1992), yet enjoy the pleasure of functioning outside the normal framework of government with the public's money (Smith, 1974). In states where governmental units have some fiscal autonomy, evidence suggests that markets do differentiate among these units' disparities in credit risk. Some empirical studies of yield spreads on state and municipal government bonds in the United States found that deficits not only tended to increase the state's interest rate spread as predicted, but that this effect also increased with the amount of borrowing. These and other similar results suggest that interest rates do incorporate information pertaining to the borrowing government's behavior and the resulting credit risks. The inconclusive finding with respect to market response by special purpose entities is perhaps consistent with some observers' view that fiscal prudence is inversely proportional to the special purpose entity's leverage over monetary policy (Bredenkamp, 1991).

TABLE 3
REGRESSION ANALYSES ESTIMATES

	AR (1) Model	First Difference Model
Total Cash & Securities	0.0502***	0.0747****
Own Revenue	-0.0738*	-0.0755**
Subsidies	0.1528***	0.1548****
Interest Rate	-22.6565**	-4.7017
<i>Control Variables</i>		
Debt Service Fund	12.4661*	27.1324****
Tax Receiver	3.0756	-0.6878
Density	0.0007	-0.0002
Appointed Board	-3.2313	0.0491
Years	Yes	Yes
Organization	Yes	Yes
Constant	3.5043	-8.1140*
+ R ² = 21.09%	*	significance < .10
++ R ² = 42.98%	**	significance < .05
	***	significance < .01
	****	significance < .001

The statistically significant findings associated with the remaining independent variables provide empirical support for the first two hypotheses. The first hypothesis, examined through an additive approach, assesses whether transportation special purpose entities follow the pecking order approach to their financing decisions. According to this hypothesis, a greater amount of internal revenue should lead to a lower amount of debt issued, as evidence that special purpose entities first utilize a pay-as-you-go financing strategy and make use of debt instruments once internal resources have been exhausted. An entity's amount of total cash & securities and revenue generated from own sources are indicative of the wealth of internal resources that could be utilized in support of a pay-as-you-go policy for capital provision. The parameter estimates for these two variables considered together for the AR(1) model, $0.0502 + (-0.0738) = -0.0236$ ($\chi^2 = 2.92$, $p < .087$), indicate that a \$100 increase in internal earned revenue and wealth will lead to an \$2.36 decrease in the average amount of debt issued per person served. This finding suggests that as a transportation special purpose entity's revenue generation and internal wealth increase, the amount of debt issued declines portraying evidence of corporate-like pecking order approach to financing capital with internally generated funds first and debt second. The parameter estimates for these two variables considered together for the first difference model implies a different outcome. Adding the two parameter estimates $0.0747 + (-0.0755) = -0.0008$ ($\chi^2 = 0.31$, $p < .578$), indicate that as a transportation special purpose entity's revenue generation and internal wealth does not have a statistically significant effect on debt issuance leading to an outcome of no statistical evidence for supporting a corporate-like pecking order approach to financing capital.

Although the AR(1) model's regression results lend empirical support to the first hypothesis that special purpose entities follow a pecking order approach to financing decisions, a caveat with respect to this finding is in order. When considered independently, the variable of total cash & securities exhibits a positive coefficient in both models. Using the parameter estimate for total cash & securities in the AR(1)

model, a \$100 increase in total cash and securities leads to an increase in the amount of debt issued by approximately \$5 per person served. This finding in both models might suggest that transportation special purpose entities with greater wealth in cash and securities can purchase more debt in the marketplace, encouraging greater use of debt by these entities. However, the variable own source revenue in both models leads to a lower level of debt. According to the estimate in the AR(1) model, an increase in own source revenue of \$100 will lead to an approximately \$7.40 decrease in the amount of debt issued. This effect is sufficient to completely negate the positive influence of total cash and securities upon debt in both models. In addition, this variable directly accounts for the ability of transportation special purpose entities to generate revenue from their own sources, which more closely resembles their capacity for maintaining a pay-as-you-go response to capital provision since internal policy may dictate a minimal liquidity reserve to offset economic changes within the marketplace, which may be captured by the cash & securities measure since it is a measure of asset flow not income flow.

The second hypothesis considers the effect of bailout anticipation on debt behavior to determine if special purpose entities exhibit restraint through market discipline. It was hypothesized that a greater reliance on financial assistance from other governments will lead to a higher amount of debt issued due to moral hazard behavior resulting from the anticipation of a bailout. The regression results associated with total subsidies to special purpose entities provides empirical support for this hypothesis. The parameter estimate of about 0.15 in each model indicates that a \$100 increase in total subsidies will lead to a \$15 increase in the average amount of debt issued per person served. This suggests that greater financial assistance provided to transportation special purpose entities, which provide mass transit services that are often heavily subsidized by other governmental units, encourages these entities to incur higher debt levels. This finding is important because the long-term effect of behavior associated with the anticipation of a bailout might lead to debt levels that are unsustainably high and threaten the financial stability of these entities. Conversely, if the expectation of a bailout is eliminated, the implication of this finding is that special purpose entities might constrain their amount of debt incurred to maintain manageable debt service levels and their creditworthiness in the market.

DISCUSSION AND CONCLUSION

The interest in special purpose entities financial behavior centered on their corporate like structure, which lead to the argument that their financial behavior would follow their organizational structure. Since these entities are subsidized, their lack of response to market issues similar to those facing private corporations is assumed in the literature. Some evidence of a lack of response is found in the analysis to the market signal of interest costs. The lack of response to the market signal of changes in interest costs may be due to the provision of service by these special purpose entities in that they are providers of a quasi-public good, mass transit. It may also be the case that special purpose entities do not respond to interest costs for a variety of other reason, such as political or organizational factors. Other indicators of a market-based financial discipline in their issuance of debt do appear to follow a corporate-like response. Statistical evidence indicates that the pecking order financial response to debt issuance may be present in these entities.

Given the concerns that quasi-governmental entities lack a response to market signals by such scholars as Axelrod (1992), the findings lend credence to the alternative suggestion that transportation special purpose entities may be directly influenced by the market. Acting with the abilities of private corporations, these entities appear to respond to similar financial circumstances as private corporations. Their own-source income is not only an important issue in accumulating subsidies, but also a key factor in the amount of debt issued; a pecking order behavior that suggests that these entities will expend own-source revenue first and then debt second in the acquisition of capital. Therefore, although these entities are public infrastructure producers, evidence is found that they may incorporate market type financial responses.

Finally, although their enabling governments may subsidize transportation special purpose entities, financially they appear to be more independent than thought. The role of own source revenue is important

in these entities. Although still indicating a dependence on governmental subsidies, the role of own-source revenues with respect to debt acquisition appears to be strong. These own-sources revenues may send the signal to the debt market that these authorities are government in service; however, are aware of the role that self-generated income plays in the financial market concerns of debt stability and debt burden.

ENDNOTES

1. Governmental character is implied when officers of the entity are popularly elected or appointed by public officials. A high degree of organizational responsibility to the public is also evidence of governmental character, which can be demonstrated by requirements for public reporting or for accessibility of records to public inspection. Governmental character can be met if either the requirement regarding officers or public accountability is fulfilled. Therefore, the Census of Governments attributes this character to any entity having power to levy taxes, power to issue debt that pays interest exempt from federal taxation, or responsibility for performing a function commonly regarded as governmental in nature.

2. An entity is determined to have substantial autonomy when it has fiscal and administrative independence, subject to statutory limitations by a state or local government. An entity is fiscally independent when its budget is determined without being subjected to review and detailed modification by local officials or governments. Furthermore, fiscal independence includes the entity's ability to levy taxes for its support, to fix and collect charges for its services, or to issue debt without review by another local government. Administrative independence is closely tied to the selection of the entity's governing body. Administrative independence is determined when the entity has a popularly elected governing body or has a governing body representing two or more state or local governments. Administrative independence can also occur with an appointed governing body, if it performs functions that are essentially different from, and are not subject to, specification by its enabling government.

3. Transportation special purpose entities with a service population of less than 50,000 are not required to report information to the National Transportation Data Base.

4. The 1997 Census of Governments identified 34,683 "special district" governments. Of these, 282 were identified as mass transit entities.

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