

# **Leverage, Growth Opportunities and The Deregulation of U.S. Electric Utilities**

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# **Leverage, Growth Opportunities and The Deregulation of U.S. Electric Utilities**

## **Abstract**

We investigate the relationship between leverage and growth opportunities using a novel dataset on U.S. electric utility deregulation. We find that this relationship can be negative or positive, depending on the nature of the growth opportunity. It is negative when the growth opportunity is more easily implemented and realized, and is positive when the growth opportunity is more difficult to take advantage of due to complexities such as customer inertia and competition. Our findings show that different types of growth opportunities affect a firm's incentives for using debt in different ways. This has important implications for future work.

**Key Words:** Leverage, Capital Structure, Growth Opportunities, Deregulation, Electric Utility  
**JEL Codes:** G32, L25, L51, L94

## 1. Introduction

We investigate the relationship between firm leverage ratios and growth opportunities<sup>1</sup>. We find that this relationship can be negative or positive, depending on the nature of a firm's growth opportunities: it is negative when the growth opportunity is more easily implemented and realized (and hence, more valuable) and is positive when the growth opportunity is valuable nonetheless, but more difficult to take advantage of. Our findings complement those of Chen and Zhao (2006) who show that the relationship between leverage and the market-to-book ratio (as a measure of growth opportunities) is non-monotonic. Our paper is different from theirs in that we identify growth opportunities that are independent of firm characteristics. Thus, we avoid complications in the use of market-to-book ratios in leverage regressions, such as issues related to market timing. More importantly, we identify a pure "demand-side" effect of growth opportunities on leverage because our measures of such opportunities are exogenous to the firm. Thus, our findings have important implications for future work.

We use a novel dataset consisting of investor-owned electric utilities (IOUs) in the U.S. from 1990-2000. Over this period, the electric utility industry transitioned from a regulated regime to a competitive one (deregulation). Regulation provided a stable environment for electric utilities where there was little variability in earnings and new investments were limited. The onset of deregulation changed the investment climate completely. Deregulation was an exogenous event<sup>2</sup> that changed a firm's long-term strategy for creating value for its shareholders. The electric utility was no longer confined to a specific customer group or to a certain geographic region. In this new environment, the utility had the opportunity to, one, gain more customers within its home state (original market), and two, gain customers from other states (new markets). We focus on the latter for two reasons: First, it

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<sup>1</sup> Existing theories predict that a firm's *growth opportunities* are an important determinant of its capital structure (Myers, 1977; Jensen and Meckling, 1976; Myers and Majluf, 1984). Consistent with these theories, prior empirical work has documented a negative relationship between firm leverage and the market-to-book ratio (Rajan and Zingales, 1995).

<sup>2</sup>As regulated monopolies, electric utilities had no financial incentive to support deregulation. The move towards deregulation was largely driven by: 1) price differences between neighboring U.S. states, and 2) the desire of regulators to reduce prices. In addition, the Energy Policy Act (1992) and the Federal Energy Regulatory Commission Orders (1996) were federal orders and not subject to manipulation of state utilities. See Joskow (1997).

represents growth opportunities that were non-existent under regulation. Deregulation clearly defines their onset. Second, it represents discretionary investment opportunities. Firms did not have to enter these new markets whereas in their home market, firms were forced to make critical decisions and strategic investments if they wanted to remain in the industry. Thus, we argue that these opportunities to enter neighboring markets represent “pure” growth opportunities.

Prior empirical work has often ignored utilities due to regulation. For regulated firms, the incentives for using debt financing can be quite different compared to non-regulated firms<sup>3</sup>. In particular, regulation can be viewed as a financial safety net because earnings are very stable under such a regime and the probability of financial distress is practically zero<sup>4</sup>. Our sample period covers the transition from a regulated to a deregulated environment. Thus, we investigate financing decisions from a unique perspective – firms reacting to competitive forces for the very first time. Sanyal and Bulan (2007) show that the regulatory and legislative changes during this period negatively affected firm leverage. They attribute the decline in leverage ratios to the increased uncertainty in both the deregulation process and the impending competitive environment, consistent with firms adjusting to a lower leverage target. We take a different approach and focus on the opportunities for growth brought about by deregulation.

## **2. Empirical Analysis**

### **2.1 Data and Firm Characteristics**

Our data is from two sources – Form 1 that regulated IOUs had to file with the Federal Energy Regulatory Commission (FERC) and various Energy Information Administration (EIA) publications from 1990-2003. Following previous work, we construct firm variables shown in Table 1. Many companies in our sample are wholly-owned by a holding company. Hence, we do not observe their

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<sup>3</sup> See Taggart (1981, 1985), Dasgupta and Nanda (1993), and Spiegel and Spulber (1994, 1997).

<sup>4</sup>This translates into a greater debt capacity for the regulated utility compared to non-regulated firms. In fact, Bradley, Jarell and Kim (1984) document that regulated industries have the highest debt-to-value ratios with electric and gas utilities second only to airlines.

stock price and cannot construct a market leverage ratio or a market-to-book ratio as other studies do. Thus, we use book leverage as our key dependent variable. We control for a firm's holding company structure using two variables: a *holding company dummy* that equals one if the utility is part of a holding company and a *holding company size measure* that equals the number of utilities in the holding company of the IOU. Our estimation sample includes 1618 observations and 190 utilities over the period from 1991-2000<sup>5</sup>.

## 2.2 Deregulation Characteristics and Growth Opportunities

In the 1990s, the federal government and FERC issued orders intended to introduce competition in the electricity market. A typical electric utility is engaged in the production, transmission and distribution of electricity. In 1992, the passing of the Energy Policy Act (EPAAct) gave impetus to wholesale power competition<sup>6</sup> and paved the way for the subsequent transition to retail competition. To control for this regime shift, we construct an *EPAAct dummy* that equals one for the post-1992 period.

In 1996, FERC Orders 888 & 889 allowed retail consumers to shop around for the best rates when purchasing power<sup>7</sup>. The actual deregulation procedures and policies, however, were left to the discretion of individual state governments. We construct a *home state deregulation dummy* (HSD) to control for home state deregulation activity and its perceived risks, while we use a *cross border competition dummy* (CBC) to control for instances where two neighboring states have both deregulated, indicating that these two neighboring states represent a larger market overall<sup>8</sup>. HSD equals one if there has been "Legislation Enacted to Implement Retail Competition"<sup>9</sup> in a utility's home state and there are no neighboring states that have enacted deregulation legislation. CBC equals

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<sup>5</sup> We exclude the post-2000 period to avoid confounding effects due to suspensions in deregulation activity across many states -- a result of the 2001 California energy crisis.

<sup>6</sup> Wholesale transactions are sales for resale. We refer the reader to Sanyal and Bulan (2007) for further details on the deregulation process.

<sup>7</sup> A significant provision in these orders stated that utilities which own transmission networks must provide transmission services to other power generators at cost-based non-discriminatory prices.

<sup>8</sup> We define a neighboring state as a state that shares a common border with the utility's home state. We focus on bordering states since they are clearly defined markets that neighboring IOUs can easily access.

<sup>9</sup> This classification is taken from the EIA's "Status of State Electric Industry Restructuring Activity", May 2000.

one if a utility's home state and at least one neighboring state have both enacted deregulation legislation.

Next, we construct measures that capture growth opportunities resulting from deregulation. Our main premise is that the primary source of growth for electric utilities under deregulation is a potentially larger customer base. Recall that we identify two potential sources for growth: 1) new customers within the IOU's home state, and 2) new customers from other deregulated states. Although the utility can increase its market share within its home state, competition from other utilities may also erode its existing market share. Moreover, home state deregulation created much uncertainty in the short run and it will be difficult to untangle this risk effect from "pure" growth opportunities. In neighboring states, however, where deregulation is also ongoing, the opportunity of capturing new markets should not suffer from these complications. Of course, competition from neighboring utilities will still be an issue and we control for this using the CBC dummy.

We construct a *neighboring state legislation measure* (NSL) that equals the number of neighboring states that have enacted legislation in support of retail competition. This is an indicator of the actual viability of the neighboring states as a new market for the utility. To capture possible size effects of neighboring markets, we construct a *potential market due to legislation in neighboring states* (PML) variable that equals the total number of customers of IOUs in neighboring states where deregulation legislation has already been passed. A larger potential market should increase incentives for capturing that market. In terms of market size, we argue that this measure represents more valuable growth opportunities for the firm.

To pin down more concrete sources of growth opportunities, we look at two specific policy instruments that were widely used in implementing deregulation. First, many states adopted policies on which company can be the default provider, i.e. if the customer does not actively choose an electricity provider, which company gets to supply power to this customer. Being under a regulated monopoly for decades, switching to a new provider may prove difficult for customers due to inertia.

Thus, we construct a measure of the *potential market due to lack of default provider policies in neighboring states* (PMDef). This variable equals the total number of customers of IOUs in neighboring states that have decreed that any company, including non-utilities, can be default providers. Hence, a utility has a higher likelihood of penetrating these new markets compared to states where a mandated default provider exists. This variable turns on when at least one neighboring state has already passed legislation on deregulation.

Second, to spur market competition after EPAct, regulators promoted the divestiture of generation assets by utilities that wanted to remain in the transmission and distribution segments of the business. It was felt that the simultaneous ownership of generation and transmission capacity within the same state and by the same company could lead them to discriminate against third parties who wanted to use their transmission networks. Thus, utilities from outside the state had the opportunity to acquire this generation capacity and by default, capture the incumbent's market share in these deregulated states. Hence, we construct the *potential market due to divestiture policies in neighboring states* (PMDiv). This variable equals the total number of customers of IOUs in neighboring states where regulators have given utilities incentives to divest or where utilities are required by law to sell off their generation assets if they choose to stay in the transmission and distribution segments of the business. Again, this variable turns on when at least one neighboring state has already passed deregulation legislation. Summary statistics for these deregulation variables are shown in Table 2.

### **2.3 Methodology**

The pace of deregulation in the U.S. electricity sector and its associated policies vary widely by state. We exploit this variation by using a difference-in-difference methodology to isolate the effect of growth opportunities on leverage. Our measures of growth opportunities vary both in the cross-section (due to differences across states) and through time (since different states deregulated at different times). We estimate our difference-in-difference model using fixed effects panel data

estimation with AR(1) errors. We regress a firm's leverage ratio on basic determinants of leverage (Rajan and Zingales, 1995), holding company measures, EPAct, HSD and CBC dummies, and our measures of growth opportunities. The coefficients on the growth opportunities variables represent the treatment effects in this difference-in-difference specification, i.e. the net effect of these growth opportunities on leverage, controlling for other external factors affecting all IOUs at the same time<sup>10</sup>.

## 2.4 Results

Table 3 presents our main results. Our findings for sales, return on assets and tangible assets are consistent with prior work. The significance of the EPAct dummy confirms our expectation of the general decline in leverage at the onset of deregulation due to the uncertainties associated with this regime shift. We also find that a utility's holding company structure significantly impacts leverage. The coefficient on the holding company dummy is positive implying that belonging to a holding company allows a firm to hold more debt. The holding company size measure is negative, implying that a larger holding company (in terms of number of subsidiaries) reduces the incentives for holding debt. Being part of a holding company may allow firms greater access to financing sources both from within and outside the holding company structure, consequently altering their debt capacity, i.e. a utility may be able to borrow more as its holding company serves as its "guarantor". Moreover, a greater number of utilities under a holding company could potentially provide some diversification benefits, resulting in a great debt capacity overall. On the other hand, the holding company structure also permits the use of net operating losses of one utility to offset positive income of another utility, resulting in lower (federal) taxes at the holding company level. Thus, a greater number of utilities under the holding company could dampen the tax shield benefits of debt, consistent with our findings. The deregulation legislation (DL) dummy is insignificant while the cross-border competition (CBC) dummy has a significant negative coefficient. This indicates that competition across states is an

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<sup>10</sup>In our regression model, there are two levels of differences: 1) the difference in leverage pre- and post-neighboring state deregulation for firm  $i$ , and 2) the difference in leverage between firm  $i$  and firm  $j$ , where firm  $i$  has at least one deregulated state neighbor while firm  $j$  does not have any deregulated state neighbors. This methodology is similar to Bertrand and Mullainathan (1999).

important aspect of deregulation that IOUs care about. We believe that the increased risks in the new competitive environment leads firms to reduce their leverage ratios to more conservative levels. We now turn to our measures of growth opportunities.

Column 1 shows that the neighboring state legislation measure (NSL) negatively impacts leverage, indicating that firms are reducing their leverage in anticipation of the opening of markets in neighboring states<sup>11</sup>. In column 2, we substitute NSL with the potential market due to legislation in neighboring states (PML) to capture the size of these viable markets. Consistent with NSL, the coefficient on PML is negative and significant. One million potential new customers in neighboring states results in a debt reduction of 3.3 million dollars. With regards to growth opportunities due to specific policy instruments, we find opposing effects on leverage. The effect of PMDef is positive while the effect of PMDiv is negative. Existing theories predict this effect to be negative.

In addition to these leverage regressions, we estimate a model of net debt issued as a function of PMDef and PMDiv (Table 4). This specification controls for a firm's financing deficit and debt capacity (Kayhan and Titman, 2007). The financing deficit measures the firm's demand for external finance (uses of funds less internal funds, or net debt and equity issued). We control for a firm's debt capacity by including the leverage gap: the difference between actual leverage and a leverage target. For regulated firms, target leverage is the sample mean leverage in 1990 and 1991 (36.4 %). For deregulated firms, target leverage is the mean leverage in a subsample of deregulated firms at least three years after deregulation legislation enactment (29.7 %). Consistent with prior work, we find that the financing deficit and a firm's debt capacity are important determinants of debt financing.

In this model, we separately identify pre- and post-neighboring state deregulation effects of PMDef and PMDiv since we are looking at debt flows instead of levels. In so doing, we can capture expectations of future growth opportunities<sup>12</sup>. Prior to legislation enactment, firms already observe

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<sup>11</sup>Enacted legislation usually includes a "start date" for retail competition. The median (mean) time to retail competition from December of the year legislation is passed to the start date is 13 (27) months.

<sup>12</sup> We redefine PMDef and PMDiv according to legislation activities in neighboring states. See Table 4 for more details.

ongoing deliberations regarding the implementation of deregulation. Thus, IOUs may already be acting on impending deregulation in neighboring states. We find that this is indeed the case. The negative effect of PMDiv on leverage is apparent in the immediate pre-deregulation years while the positive effect of PMDef shows up in the post-deregulation years – indicative of a dynamic response of financing to growth opportunities. Consistent with the leverage regressions, we find that PMDiv (PMDef) results in less (more) debt issued in response to these opportunities for growth.

Our priors are that PMDef and PMDiv both represent growth opportunities where the larger the potential market, the more valuable the growth opportunity. Existing theories predict leverage and growth opportunities to be negatively correlated. To explain these different results, we need to consider the exact nature of these growth opportunities. Anecdotal evidence during this period shows that acquisitions of generation assets across states occurred frequently and rather quickly. Once a utility acquired generation capacity in a new market, it automatically inherited the target firm's customers. High switching costs for customers (inertia) played a large role in this process. On the other hand, although a state may NOT have a mandated default provider, if neighboring IOUs did not own generation capacity in that state, it would have to actively attract new customers at the expense of lowering prices. Thus, although PMDef and PMDiv both represent valuable growth opportunities for a firm, the latter is more easily implemented and realized, while the former is more difficult to take advantage of due to customer inertia and competition.

## **2.5 Robustness Tests**

We perform the following robustness tests and our findings are unchanged: 1) leverage regression estimation by feasible generalized least squares and Prais-Winsten with firm fixed effects, both with AR(1) errors; 2) a logit transformation of the dependent variable since the leverage ratio, by definition, is a share, and hence is bounded between zero and one; and 3) estimating the target leverage ratio (Table 4) as a function of firm sales, return on assets, tangible assets and the holding company structure.

### **3. Conclusion**

We find that the relationship between leverage and a firm's growth opportunities can be negative or positive, depending on the exact nature of the growth opportunity: it is negative when the growth opportunity is more easily implemented and realized, and is positive when the growth opportunity is more difficult to take advantage of due to complexities such as customer inertia and competition. These findings complement Chen and Zhao (2006). They show that the relationship between leverage and market-to-book is negative for high market-to-book firms and is positive for low to medium market-to-book firms. In this paper, high market-to-book firms correspond to IOUs with growth opportunities that are easily realized, while the low to medium market-to-book firms correspond to IOUs with growth opportunities that are harder to implement. Our findings imply that different types of growth opportunities affect a firm's incentives for using debt in different ways. Moreover, we identify a pure "demand-side" effect of growth opportunities on leverage since our measures of such opportunities are exogenous to the firm.

These findings pose several challenges for future work. First, empirical work needs to identify more concrete measures of growth opportunities to capture their complex nature. Not all investment opportunities are alike and identifying such differences may lead to richer and illuminating conclusions. Two, theoretical models will need to disentangle these different effects of growth opportunities on a firm's leverage ratio. Finally, our results also show that estimation strategies that can identify the dynamics of firm financing behavior can yield richer insights on firm financial policy in general.

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**TABLE 1: Summary Statistics  
Firm Characteristics 1991-2000**

<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Max.</b>	<b>Min.</b>	<b>Obs.</b>
Total Assets (\$ `000)	3,294,623	1,734,308	4,422,213	21,900,000	5,664	1618
Sales Revenue (\$ `000)	1,197,444	667,400	1,541,842	7,553,079	4,425	1615
Book Leverage (%)	33.76	32.75	11.23	77.15	0.86	1618
Return on Assets (%)	14.06	14.50	4.24	27.79	-0.74	1614
Tangible Assets/Total Assets (%)	67.36	71.80	17.99	95.78	2.36	1618
Net Debt Issued/L.Total Assets (%)	0.18	0	4.39	18.14	-14.60	1618
Net Preferred Stock Issued/L.Total Assets (%)	-0.16	0	0.68	2.44	-3.06	1618
Net Common Stock Issued/L.Total Assets (%)	0.22	0	1.10	7.00	-3.06	1618
Financing Deficit/L.Total Assets (%)	0.25	0	4.81	20.15	-16.07	1618
Leverage Gap (%)	0.34	-1	11.3	47.5	-35.6	1618
Holding Company Dummy	0.73	1	0.45	1	0	1618
Holding Company Size Measure	2.96	2	3.33	15	0	1618

Notes: Book Leverage = (Short-Term Debt + Long-Term Debt)/Total Assets. Return on assets is EBITDA/Total Assets. Tangible assets is net plant and fuel. Net debt issued = total debt issued – total debt repurchased. Net preferred (common) stock issued = total preferred (common) stock issued – total preferred (common) stock repurchased. Financing deficit = net debt issued + net preferred stock issued + net common stock issued. Leverage Gap = Book Leverage – Target Leverage. (See page 8 for a definition of target leverage). The holding company dummy equals one if the firm is part of a holding company. The holding company size measure equals the number of firms that belong to the holding company. L = lag operator.

**TABLE 2: Summary Statistics  
State Deregulation Characteristics 1991-2000**

<b>Variables</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Max.</b>	<b>Min.</b>	<b>Obs.</b>
Home State Deregulation Dummy (HSD)	0.03	0	0.18	1	0	472
Cross Border Competition Dummy (CBC)	0.13	0	0.34	1	0	472
Neighboring State Legislation Measure (NSL)	0.61	0	1.07	6	0	472
Potential Market Due to Legislation in Neighboring States* (PML)	2.27	0	4.32	20.08	0	472
Potential Market Due to Lack of Default Provider Policies in Neighboring States* (PMDef)	0.33	0	1.24	5.63	0	472
Potential Market Due to Divestiture Policies in Neighboring States* (PMDiv)	1.52	0	3.53	13.91	0	472

Notes: \*Millions of customers. HSD equals one if the state has enacted deregulation legislation and has no neighboring state that has done the same. CBC equals one if both home state and at least one neighboring state have enacted deregulation legislation. NSL equals the number of neighboring states that have enacted deregulation legislation. PML equals the total number of customers in neighboring states that have enacted deregulation legislation. PMDef equals the total number of customers in neighboring states that have enacted deregulation legislation and have no mandated default provider policy. PMDiv equals the total number of customers in neighboring states that have enacted deregulation legislation and have divestiture policies in place. These variables vary across states and across time.

**TABLE 3: Leverage and Growth Opportunities**

Dependent Variable: Total Debt/Total Assets

	(1)	(2)	(3)	(4)
<b>Controls</b>				
L.Log Sales	0.0001*** (0.00003)	0.0001*** (0.00003)	0.0001*** (0.00003)	0.0001*** (0.00003)
L.Return on Assets	-0.137** (0.060)	-0.133** (0.060)	-0.140** (0.060)	-0.140** (0.060)
L.Tangible Assets/Total Assets	0.058*** (0.020)	0.060*** (0.020)	0.063*** (0.020)	0.064*** (0.020)
Holding Company Dummy	0.017** (0.007)	0.016** (0.007)	0.015** (0.007)	0.015** (0.007)
Holding Company Size Measure	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)
EPAAct Dummy	-0.028*** (0.004)	-0.027*** (0.004)	-0.027*** (0.004)	-0.027*** (0.004)
Home State Deregulation Dummy (HSD)	-0.005 (0.006)	-0.005 (0.006)	-0.005 (0.006)	-0.005 (0.006)
Cross Border Competition Dummy (CBC)	-0.007 (0.005)	-0.009* (0.005)	-0.009* (0.005)	-0.010** (0.005)
<b>Measures of Growth Opportunities</b>				
Neighboring State Legislation Measure (NSL)	-0.006*** (0.002)			
Potential Market Due to Legislation in Neighboring States <sup>+</sup> (PML)		-0.001*** (0.0005)	-0.0004 (0.001)	
Potential Market Due to Lack of Default Provider Policy in Neighboring States <sup>+</sup> (PMDef)			0.003* (0.002)	0.003* (0.002)
Potential Market Due to Divestiture Policy in Neighboring States <sup>+</sup> (PMDiv)			-0.002** (0.001)	-0.003*** (0.001)
<b>Relevant Statistics</b>				
Observations	1428	1428	1428	1428
Number of firms	180	180	180	180
R-Square	0.002	0.002	0.002	0.002
Rho (autocorrelation coefficient)	0.654	0.658	0.657	0.657

Notes: Fixed effects panel data estimation with standard errors (in parenthesis) adjusted for first order autocorrelation. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All columns include a constant term. L = lag operator. Return on assets is EBITDA/Total Assets. Tangible assets is net plant and fuel. The holding company dummy equals one if the firm is part of a holding company. The holding company size measure equals the number of firms that belong to the holding company. EPAAct Dummy = 1 if year is greater than 1992. HSD equals one if the state has enacted deregulation legislation and there are no neighboring states that have done the same. CBC equals one if both home state and at least one neighboring state have enacted deregulation legislation. NSL equals the number of neighboring states that have enacted deregulation legislation. PML equals the total number of customers in neighboring states that have enacted deregulation legislation. PMDef equals the total number of customers in neighboring states that have enacted deregulation legislation and have no mandated default provider policy. PMDiv equals the total number of customers in neighboring states that have enacted deregulation legislation and have divestiture policies in place. <sup>+</sup>Millions of customers.

**Table 4: Financing Activity Due to Neighboring State Deregulation Legislation**  
 Dependent Variable: Net Debt Issued/L.Total Assets

	(1)	(2)
Financing Deficit/L.Total Assets (%)	0.890*** (0.022)	0.890*** (0.021)
Positive Leverage Gap (%)	0.058*** (0.021)	0.058** (0.023)
Negative Leverage Gap (%)	0.009 (0.014)	0.009 (0.014)
Potential Market Due to Lack of Default Provider Policy in Neighboring States <sup>+</sup> (PMDef)		0.093** (0.047)
Potential Market Due to Divestiture Policy in Neighboring States <sup>+</sup> (PMDiv)	0.023 (0.018)	
<b>Potential Market in Neighboring States<sup>+</sup> in <i>Deregulation Time</i></b>	<b>PMDef</b>	<b>PMDiv</b>
Potential Market in Neighboring States Pre-Deregulation Legislation <sup>+</sup> (Years -3 to 0)	-0.017 (0.014)	-0.087* (0.051)
Potential Market in Neighboring States Post-Deregulation Legislation <sup>+</sup> (Years 1 to 3)	0.093** (0.047)	0.023 (0.018)
<b>Relevant Statistics</b>		
Number of Observations	1031	1031
Number of Firms	186	186
R-Square	0.903	0.903
Chi-Square	2686.737	2588.389

Notes: Fixed effects panel data estimation with bootstrapped standard errors (500 repetitions) in parenthesis. \*significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. L = lag operator. Financing deficit = net debt issued + net preferred stock issued + net common stock issued. Leverage Gap = Book Leverage – Target Leverage. (See page 8 for a definition of Target Leverage). Year 0 is the earliest year that at least one neighboring state enacts deregulation legislation. Years 1 to 3 are the three years subsequent to year 0 while years -3 to -1 are the three years prior to year 0. PMDef equals the total number of customers in neighboring states that have no mandated default provider policy. PMDiv equals the total number of customers in neighboring states that have divestiture policies in place. PMDef and PMDiv are non-zero when at least one neighboring state has either deregulation deliberations ongoing, legislation expected to be passed, or legislation already enacted. Column 1 (2) separately identifies PMDef (PMDiv) in the pre- and post-neighboring state deregulation periods. The estimation sample includes the seven year period centered on neighboring state deregulation (Year 0). <sup>+</sup>Millions of customers.