

Do Gasoline Pricing Laws Affect Prices? It Depends on the Plaintiff

Carson W Bays
Economics Department
East Carolina University
Greenville, NC 27858-4353
252-328-2948
baysc@ecu.edu

December 1, 2010

ABSTRACT

Do Gasoline Pricing Laws Affect Prices? It Depends on the Plaintiff

Studies of the effects of the "below-cost" gasoline pricing laws that exist in several states have led to contradictory results regarding the significance and direction of price impacts at the retail level. The majority have found such laws produce higher prices because they insulate inefficient firms from competition with more efficient firms. However, some research has concluded that these laws actually lower prices, at least temporarily. This study uses monthly data at the state level from 1987 through 2006 to reconsider the price impacts of the laws by including variables that distinguish between public suits filed by state attorneys general and private suits filed by firms directly involved in retail gasoline sales. The existence of such a law in a state significantly raises retail gasoline prices but this impact is offset slightly by negative price effects of suits filed by public sector plaintiffs.

Do Gasoline Pricing Laws Affect Prices? It Depends on the Plaintiff

1. Introduction

Seventeen US states have had fair marketing laws that prohibit a retailer from selling gasoline at a price below the wholesale price. The stated purpose typically is to protect consumers from monopoly pricing resulting from large national firms driving small independent retail gasoline sellers from the market by temporarily pricing below cost. Laws against charging low retail prices to damage a competitor have a long history in the US. Economists long have been skeptical of the possibility of predatory pricing as a rational business strategy to exploit market power and critical of the efficiency impacts of laws used to litigate such contentions. For example, antitrust task forces during the Johnson administration (the “Neal Report”) and the Nixon administration (the “Stigler Report”) both recommended repeal of the 1936 Robinson-Patman Act despite disagreeing on virtually every other recommendation. The recommendation for repeal was reiterated in the 2007 report of the Antitrust Modernization Commission. That report also noted that many states have “sector-specific” laws regarding pricing and the state fair marketing laws prohibiting predatory pricing in retail gasoline sales are examples.

The Bureau of Competition of the Federal Trade Commission warned against the adoption of such a law at the federal level or extension of these laws into other states because of the probable increase in market prices to consumers (FTC, 2002). Indeed, most policy and empirical studies of the price impacts of state gas-pricing laws have concluded that they raise retail prices (e.g., Hogarty, 1984; Barron et al, 1985; Fenili and Lane, 1985; Savvides-Gellerson, 1987; Johnson, 1999; Anderson and Johnson, 1999; Calvani, 2001). Only one study (Skidmore et al, 2004) found evidence that the laws lowered retail prices and the effect was modest and temporary.

None of these studies have considered the impact of actual litigation on prices. This paper adds to the literature by considering the incentives of different parties to file or avoid suit and the degree to which such laws actually result in legal action. The next section summarizes the rationale for distinguishing the price effects of lawsuits filed by private firms from those filed by governments. The third section describes that data and econometric specification. A final section summarizes the results.

2. Legislation and the motivation to sue

Common law legal systems assign the judiciary an essential role in determining the meaning and scope of laws created by the legislature. But courts adjudicate only those cases which come before them and these are a subset of those legal actions by parties with motivations to file suit. Both the creation of new statutes and their eventual use in litigation take place within the context of interaction among many self-interested parties with each attempting to protect or enhance their its own position. The context of litigation also includes some degree of uncertainty for both plaintiff and defendant (Priest and Klein, 1984; Cooter and Rubinfeld, 1989). Once a court renders a definitive opinion on the application of a statute this uncertainty is reduced which in turn affects the number and types of legal disputes that subsequently arise. The decrease in the uncertainty surrounding litigation risk changes the incentives of potential plaintiffs to sue and the incentives of potential defendants to mitigate the risk of being sued.

The prevailing assumption in most studies of the price impact of gasoline pricing laws is that they were created at the behest of small sellers as protection against the greater efficiency of larger rivals: "... specific [sales-below-cost] laws are the product of a focused effort on the part of gasoline retailers to influence state legislatures."¹ It is notable that the most vigorous advocacy for these laws across the US has come from the Petroleum Marketing Association of America which promotes itself as representing small sellers.² That private parties use the powers of the legislative and judicial branches of government to promote their own economic interests is a common insight of both the law and economics literature (see e.g., Landes and Posner, 1979) and of that dealing with the economics of regulation (Viscusi et al, 2005). Suits filed under state gasoline fair marketing laws are usually initiated either by gasoline retailers, their trade associations, or the state attorney's office. Litigation initiated by a private seller is likely to be a straightforward attempt to constrain competitors but the interests of state attorneys to file such suits is less clear. Election by popular vote is the dominant method of selecting attorneys general in those states with gasoline fair marketing laws.³ This raises the possibility that consumer protection rationales are adopted for political reasons by state attorneys, particularly among those who have ambitions for higher public office. Aggressive enforcement by an attorney general's office increases the potential risk of costly litigation and fines to retailers and can constrain prices and retail margins even in the absence of market power or predatory intentions against competitors. The distinction between the price effects of public and private parties' use of the state gas pricing laws has been ignored in previous studies of price effects of below-cost gasoline laws.

3. Empirical specification and data

The following fixed effects econometric model is estimated:

$$R_{it} = \alpha D_{it} + \beta L_{it} + \gamma X_{it} + \zeta_i + \tau_t + \varepsilon_{it},$$

where R_{it} is specified alternatively as the retail average price of unleaded gasoline, the retail percent markup, and the wholesale price of unleaded gasoline in state i at time t ; α , β , and γ are the vectors of estimated coefficients; D_{it} denotes whether and when each state has a below-price gas pricing law; L_{it} represent measures of litigation activity distinguished by the type of plaintiff; X_{it} is a vector of supply and demand factors determining prices; ζ_i and τ_t are state and time fixed effects, respectively; and ε_{it} is a vector of random errors. The data are a panel of monthly gasoline prices and markups for the forty-eight contiguous states and the District of Columbia over the period January 1987 through December 2006. This produces 11,760 potential

¹Anderson and Johnson, 1999, p. 190.

²See e.g, Kamerschen, 2007.

³There are only two exceptions. The attorney general is appointed by the Governor in New Jersey and by the state supreme court in Tennessee.

observations for which complete data for all variables were available for 8,384. The definitions and rationales for each of the variables in Table 1 are as follows:⁴

Gas Law is a dummy variable taking the value one in eleven months in which a below cost gasoline pricing law is in effect within a state.⁵ The other two legal variables distinguish instances of successful litigation of these laws by the type of plaintiff.⁶ *Public Suit* is measured as subsequent cites in later court decisions to successful legal actions initiated by state or municipal attorneys and *Private Suit* does likewise for litigation initiated by private plaintiffs. Among the cost variables is the *Crude Price* of oil within each state's petroleum district entered as the average price in the month and as lagged values for one and two months. *Gulf War* is a dummy variable taking the value one for June 1990 through June 1991, the months immediately prior to and during the Persian Gulf War. The *Reformulated Gas* and *Oxygenated Gas* variables separately identify those states and periods in which those special higher-cost products are in use, and *Gas Wage* is the mean wage of gasoline station attendants. Demand variables include real personal *Income*, the numbers of *Drivers Per Capita* and *Vehicles Per Capita*, and the *Population* and population *Density* for each state. Other variables measure the composite federal and state gasoline *Taxes* and the number of retail gasoline *Stations per Capita*. *Degree Days* is included to capture variations in seasonality factors among states not fully captured by the time variables.

4. Results and conclusions

The presence of a state law prohibiting a retail firm from selling gasoline at a price below costs raises average retail gas prices by about two cents per gallon. Successful cases initiated by private parties are associated with higher price but the impact of suits filed by the public sector have a slight negative impact. This effect is very modest, however, compared to the price effect of the existence of the law. Wholesale price and the percentage markup from wholesale to retail price are affected as well with the markup being increased by both the existence of the law and active litigation by either public or private plaintiffs. By far the most important determinant of prices and markup is the price of crude oil. The other variables have either expected or insignificant effects on prices.

State laws prohibiting retailers from selling products at prices below costs are nominally

⁴The time and state effects variables are omitted but the complete regression results are available at [http://core.ecu.edu/econ/bayasc/Research/Gas Prices/Results/RS.pdf](http://core.ecu.edu/econ/bayasc/Research/Gas%20Prices/Results/RS.pdf).

⁵During the data period two states, Georgia and Montana, eliminated their gas-pricing laws. Such laws became active in Arkansas (1993), Colorado (1993), Maryland (2000), Minnesota (2001), Missouri (1993), Montana (1991), New York (2004), South Carolina (1993), and Utah (1987). The below-cost gasoline pricing laws in the remaining six states with such statutes were in effect for the entire sample period.

⁶Successful in this context means a lawsuit in which the plaintiff prevails in that the court rendering an unambiguous decision that enforces the statute.

intended to prevent firms with market power from destroying smaller competitive firms by temporarily incurring losses on sales that are offset by higher profits once the competitive firms exit. Two necessary conditions for such a pricing strategy to be effective in increasing the present value of future profit are that small rivals are destroyed quickly and that subsequent price increases do not stimulate eventual new entry into the market. These are severe restrictions that seem especially unlikely to occur in the retail sales of gasoline. Laws which prohibit below-cost pricing by retailers raise retail price and markup by significant amounts although there is a modest negative price effect when suits are filed by public as opposed to private plaintiffs. The identity of the plaintiff therefore does matter but the preponderance of evidence is that the laws primarily serve the interests of smaller firms by discouraging price competition from larger rivals.

Table 1 Gasoline prices and markups, 1987-2006

<u>Legal</u>	<u>Retail Price (2006¢)</u>		<u>Retail Markup</u>		<u>Wholesale Price (2006¢)</u>	
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
Gas Law	2.45	3.63	.018	4.45	1.30	1.93
Public Suit	-.52	-5.12	.002	3.25	-.69	-6.79
Private Suit	.25	3.89	.0012	2.99	.14	2.09
<u>Cost</u>						
Crude Price	75.83	36.98	-.28	-22.45	96.48	47.19
Crude Lagged 1	37.72	12.01	.13	6.73	18.42	5.88
Crude Lagged 2	11.22	5.50	-.010	-.91	10.93	5.38
Gulf War	4.30	7.1	-.015	-4.28	5.01	8.85
Reformulated	.45	.93	-.016	-5.41	2.52	5.21
Oxygenated	4.09	5.97	.032	7.78	1.21	1.78
Gas Wage	.001	.10	.00007	1.82	-.005	-.75
<u>Demand</u>						
Income	.001	4.17	.0000003	.27	.0007	4.31
Vehicles Per	-.01	-2.75	-.0001	-4.77	-.006	-1.09
Drivers Per	-2.23	-2.03	-.007	-1.10	-1.62	-1.48
Density	-.005	-1.95	.00009	4.9	-.005	-1.70
Population	.0001	4.82	-.000000001	-.63	.000001	3.67
<u>Other</u>						
Tax	7.60	3.84	.073	6.08	3.58	1.82
Stations per	12,042.82	4.86	18.66	1.24	10,352.80	4.19
Degree Days	-.005	-8.61	.00001	3.56	-.006	.0006458
Constant	8.11	1.07	.024	0.51	1.53	.20
N=	8,384		N=	8,369	N=	8,369
R ² =	0.90		R ² =	0.37	R ² =	0.78

References

- Anderson, R. W. and R. N. Johnson, 1999, Antitrust and sales-below-cost laws: the case of retail gasoline, *Review of Industrial Organization* 14, 189-204.
- Antitrust Modernization Commission Final Report, April 2007,
(http://govinfo.library.unt.edu/amc/report_recommendation/amc_final_report.pdf)
- Barron, J., M. A. Loewenstein, and J. R. Umbeck, 1985, Predatory pricing: the case of the retail gasoline market, *Contemporary Economic Policy*, 3, 131-140.
- Calvani, T., 2001, Predatory pricing and state below-cost sales statutes in the United States: an analysis(Competition Bureau, Ottawa,).
- Cooter, R. D. and D. L. Rubinfeld, 1989, Economic analysis of legal disputes and their resolution, *Journal of Economic Literature*, 27, 1067-1097.
- Federal Trade Commission Bureau of Competition, 2002, Comment on Senate bill no. 458, "Below-cost sales of motor fuels."
- Fenili, R.N. and W. C. Lane, 1985, Thou shall not cut prices! *Regulation* 9, 31-35.
- Hogarty, T., 1989, The decline of motor gasoline service stations and motorists' access to car maintenance services, Discussion paper #058 (American Petroleum Institute, Washington, D. C.).
- Johnson, R.N., 1999, The impact of sales-below-cost laws on the U. S. retail gasoline market, (Industry Canada, Ottawa).
- Kamerschen, D. R., 2007, An economic analysis of motor fuel fair marketing laws, (Petroleum Marketers Association of America, Arlington, VA).
- Landes, W. M. and R. A. Posner, 1979, Adjudication as a private good, *Journal of Legal Studies*, 8, 235-284.
- Priest, G. L. and B. Klein, 1984, The selection of disputes for litigation, *Journal of Legal Studies*, 13, 1-55.
- Report of [President Johnson's] white house task force on antitrust policy [the "Neal" report], 1968, *Journal of Reprints Antitrust Law and Economics* 1, 633-826.
- Report of [President Nixon's] task force on productivity and competition [the "Stigler" report], *Journal of Reprints Antitrust Law and Economics* 1, 829-881.
- Savvides-Gellerson, E., 1987, The effects of state "below-cost" selling laws on the retail prices of motor gasoline, Research Study 043 (American Petroleum Institute, Washington, D. C.).
- Skidmore, M., J. Peltier, and J. Alm, 2004, Do state motor fuel sales-below-cost laws lower prices? *Journal of Urban Economics* 57, 189-211.
- Viscusi, K., Vernon, J., Harrington Jr., J. 2004, *Economics of regulation and antitrust*. (MIT Press, Cambridge).