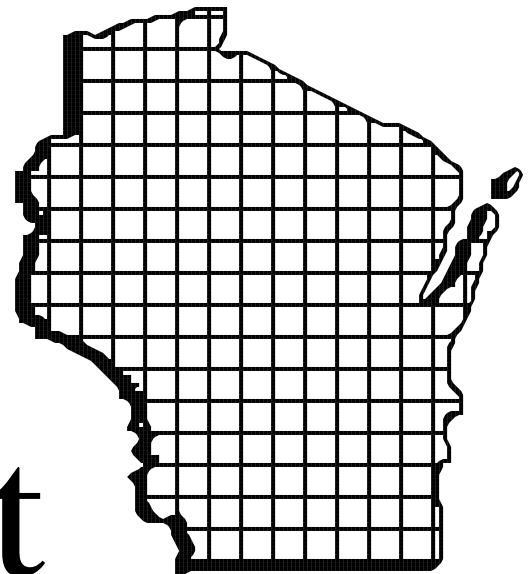


Wisconsin

Policy
Research
Institute

Report



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**PUMPING UP GAS
PRICES IN
WISCONSIN:**

*The Effects of the Unfair
Sales Act on Retail
Gasoline Prices in
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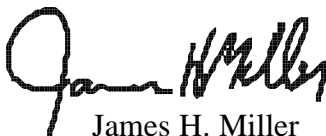
REPORT FROM THE PRESIDENT:

One of the economic lessons in life is that when gasoline prices go up, it always seems to be by a nickel, and when they fall, it always seems to be by a penny. Few in Wisconsin are unaware of how much it costs to buy gas in our state. On October 1, 1999, I went out to examine gasoline prices. In suburban Milwaukee I found prices ranging from a low of \$1.29 to a high of \$1.33. Kenosha prices were almost exactly the same as Milwaukee prices. Then I drove into Illinois. Just across the border in Waukegan, the price spread rose dramatically, going from a low of \$1.17 to a high of \$1.34. Bordering states always seem to have better gasoline prices than Wisconsin. This study hopefully begins to answer some of the questions why.

Several months ago we contracted with Professor James Brannon, an economist at the University of Wisconsin-Oshkosh, and Dr. Frank Kelly, a senior tax analyst with the Indiana State Board of Tax Commissioners and adjunct Assistant Professor at Indiana/Purdue University-Indianapolis, to examine gas pricing in Wisconsin compared to some neighboring states. Their research established that one reason why gas prices in Wisconsin are higher than neighboring states is the Unfair Sales Act. They calculate that this law cost consumers a conservative estimate of at least \$50 million in 1998.

This report is academic research. Their conclusions and suggestion that the Unfair Sales Act be repealed is not something that our institute endorses. We neither oppose or nor favor any kinds of legislation. But we do believe this research suggests that the issue should be debated by the legislature. If this academic research is correct, the idea of Wisconsin consumers having to spend millions of extra dollars a year, for no apparent reason other than to help a few large corporations, seems ridiculous at face value.

I may be wrong, but I suspect that there are few people in Wisconsin who have not noticed that our gas prices seem to be much higher than neighboring states. It is time for our government officials to see if they can find a way to ease our burdens.



James H. Miller

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PUMPING UP GAS PRICES IN WISCONSIN: *The Effects of the Unfair Sales Act on Retail Gasoline Prices in Wisconsin*

JAMES I. BRANNON
FRANK KELLY

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EXECUTIVE SUMMARY

The state of Wisconsin's Unfair Sales Act prevents the sale of any item below cost in order to attract business, and specifically requires gas stations to mark up their prices by at least six percent over the wholesale price. While the ostensible reason for this law is to protect small, independent retailers and thus enhance competition, the evidence suggests that the primary result of this law has been to inflate the price of gasoline for Wisconsin consumers and facilitate tacit collusion in retail gasoline markets.

To determine the effect of this law on the Wisconsin gasoline market, we examine gasoline prices in Eau Claire and Beloit, Wisconsin as well as in a similar sized market outside the state, Duluth, Minnesota. The data show that when the penalties for violating the Unfair Sales Act were strengthened, the average markup of retail gasoline over the wholesale price increased by two cents a gallon in Eau Claire and by three cents a gallon in Beloit, without a commensurate change in the average markup in the Duluth market. What's more, by comparing the dispersion of prices within the three markets, we find that the Eau Claire market is not as competitive as the Duluth market, which has no law comparable to the Unfair Sales Act, or the Beloit market, which is subject to the competitive effects of nearby Illinois.

The net cost of this law to consumers is easy to calculate: Given that over 2.5 billion gallons of gasoline were sold in the state in 1998, the two cents to three cents price increase translates to Wisconsin drivers spending at least \$50 million more on gasoline than without the law, with most of that money going to large, multinational oil companies that own stations in Wisconsin. As this law adds to the overall transportation costs in the state and results in an outflow of funds from Wisconsin to external markets, this number probably understates the true cost of this law to Wisconsin residents.

The benefits of such a law are dubious. If gasoline prices are higher because of its existence, then clearly it is not increasing competition in any meaningful sense of the word. There is also little evidence to suggest that the law saved any small, independent gas stations from oblivion, given that the government already drove most small stations out of business in the past twenty years with stringent environmental regulations.

We suggest that the Unfair Sales Act be repealed and real competition be allowed in retail gasoline markets in Wisconsin.

INTRODUCTION

A myth that continues to exist in the minds of the public and many a government regulator is the notion of predatory pricing, or "cutthroat" competition. The idea is that competition among businesses for customers can become so fierce that a market with several competitors may eventually reach the point where only one victor is left standing, allowing that firm to reap the spoils of monopoly profits.

While predatory pricing may be intuitively appealing, especially to politicians, proven instances of predatory pricing are quite rare, and the methods of preventing it often impose a social cost higher than any monopoly. The basic problem with the premise is that unless the remaining firm can keep other competitors from entering the market in the future, it does not stand to gain much from predatory pricing.

To prevent predatory pricing in the retail gasoline market, the State of Wisconsin enacted a number of laws designed to ensure "reasonable" profits and prevent excessive competition among gas stations. To that end, Wisconsin's Unfair Sales Act (Wisconsin Statute 100.30(2)) requires that every gasoline retailer mark up the price of gasoline by at least 6% a gallon over the wholesale rate, or 9.18% from the posted terminal, or "rack" rate.¹ Moreover, all gas stations are required to explicitly post all prices so as to be easily visible from the street, and stations may not change prices more than once every 24 hours. We argue that these regulations effectively transfer income from consumers to sellers via higher prices and profits. Our contention is that these laws facilitate tacit collusion amongst the retail gas stations in Wisconsin.

The primary objective of this research is to quantify the effect of the State of Wisconsin's Unfair Sales Act on the price of retail gasoline in the state. A secondary objective is to determine whether the Unfair Sales Act prevented the demise of small, independent gas stations throughout the state, as was its intent. Legislators in the State Assembly have recently proposed a bill that would repeal the law, just one year after increasing the penalties for violating the terms of the act.

Our estimate is that strengthening the penalties associated with violating the Unfair Sales Act added approximately two cents to three cents to the price of a gallon of gasoline, costing Wisconsin drivers approximately \$50 million a year in higher gasoline prices. This amount does not include the higher cost of transporting other goods within the state, which would increase the total cost of this law. We also find evidence that the Unfair Sales Act generally lowers the variation of prices in a given market, giving consumers less choice and ultimately giving the retailers of gasoline more market power.

BACKGROUND

The Wisconsin Unfair Sales Act has existed in some form since the 1930s, a vestige of the state's strong socialist tradition as well as the New Deal's interventionist attitude, when government price fixing was thought of as a possible solution to the Great Depression.² The current law generally prohibits any selling of a retail good at a price "below cost," and additionally mandates that retailers mark up fuel at least 6% over the wholesale price, or 9.18% over the posted terminal price, whichever is higher.

Until recently, enforcement was irregular and the penalties for violating the law amounted to a small fine. However, effective 1 August 1998, the damages for violating the Unfair Sales Act can amount to either three times the amount of any loss sustained or \$2000 multiplied by each day of violation, plus attorney fees. The law was also amended to allow anyone harmed by a violation of the Unfair Sales Act to bring an action against the violator. The new law also plugged a loophole in the law that essentially exempted vertically integrated firms (that is, retailers owned by their oil suppliers).³ In March 1999, a proposal was made in the Wisconsin General Assembly to repeal the portion of the Unfair Sales Act that applies to gasoline.

The intent of the Unfair Sales Act, as stated by the sponsors of the new legislation, is to prevent predatory pricing (Milam, 1997), which describes the situation where larger firms reduce prices and suffer short-term losses in order to draw customers away from competitors and thus bankrupt smaller firms, subsequently reaping monopoly profits. The idea underlying predatory pricing is that in the long run, the profits earned by the larger gas station and the prices consumers pay outweigh the losses earned while undercutting smaller rivals. Hence, the justification for this law is that by protecting the smaller stations, competition will be enhanced, forcing gasoline prices lower and keeping a greater number of independently run gas stations in business than would otherwise be the case.

Economists have a number of problems with the rationale behind predatory pricing. First, the idea of a contestable market disputes the idea that the survivor of a price war would ever be allowed to survive in the market without subsequently facing competition. Markets where firms earn high, above-normal profits will invariably draw competitors unless the entry costs are too high. Baumal, Panzar, & Willig (1982) point out that even if new firms do not enter into the market, the mere possibility of new firms entering the market may be enough to force stations to keep prices (and profits) lower to deter such entry.

Bork (1978) points out that for an economic predator to recoup losses requires economic conditions that are rarely met, and certainly don't exist in the retail gasoline market. To wit, the barriers to new entrants today are not that high. While it is true that the cost of constructing a new gas station today is a considerable investment, in a market wracked by predatory pricing a substitute for a new station readily exists in the old stations driven out of business. Given that the National Association of Convenience Stores reports that at a minimum at least 1000 new stations were added in 1998, according to the National Petroleum News *1999 Market Facts*, it is difficult to argue that new competitors are unable to enter a market.

Thomas (1997) reports that courts are generally wary of claims of predatory pricing, and that even evidence suggesting that smaller firms exited an industry subsequent to a larger firm dramatically cutting prices is not sufficient to prove predatory pricing. American Airlines, for instance, dramatically cut its prices as part of its "Value Pricing" plan in 1992 with the explicit forecast that while some competitors would go bankrupt, long-term profits would not make up for the short-term loss accruing from the lower prices. Such an apparently irrational, non-profit-maximizing move by a CEO as respected as Robert Crandall is attributed to weak corporate governance and a compensation structure that weighted market share more than profits. The courts concluded that this was not predatory pricing: Customers benefited greatly from this strategy at the expense of the airline firms.

While many gas stations have failed in the past twenty years, this simple fact cannot be considered *prima facie* evidence of predatory pricing in the retail gasoline market. Instead, blame for this can be put on a changing industry and on stringent new regulations placed on gas-station owners. Beginning in 1988, the federal government

began imposing strict environmental regulations on gas stations to minimize environmental damage from leaking gas tanks, and the costs of adhering to these regulations drove many smaller, less efficient stations out of business. New double-hulled fiberglass tanks, elaborate spill-catch systems, and systems that prevent pipes from freezing have all become required in the past ten years. The result is that the government essentially weeded out the smaller stations that did not have the cash flow capable of supporting such a large fixed investment, and any stations currently selling gas should have no problem meeting environmental standards for some time.

And while gas stations were closing in the last twenty years, new gas stations were opening to take their place. In fact, by some estimates, there are now more stations today in the U.S. than there were fifteen years ago. According to the National Petroleum Marketers' Association 1999 Fact Book, as of 1 May 1999 there were approximately 180,000 stations, which indicated a substantial increase during the decade. In 1972, the Census Bureau reported 5,182 stations in Wisconsin. The National Petroleum Marketer's Association reported that Wisconsin had 3,946 stations as of May 1998, down slightly from 4,250 in 1993.⁴ These stations scarcely resemble the stations of the 1970s. In the last twenty years, the complementary products offered to customers buying gas are no longer an oil change or a tune-up, but rather lottery tickets, cigarettes, and snack food. The stations of today have more pumps, sell a greater volume of gas, offer a greater variety of goods, and in general are cleaner and more pleasant than those of a generation ago. The average gas station of today pumps twice as much gas as the average station of a generation ago.

What happened to retail gas stations in the 1980s and 1990s is similar to the experience of drug stores and supermarkets in the same period of time. Larger, more modern stores proved to be appealing to consumers, and the lower prices such stores generally offered were below what the smaller, more traditional stores could offer, driving the small firms out of business. While many bemoaned the fate of small mom-and-pop business, consumers generally enjoyed the convenience and low prices to put up much of a fight. Few suggest that prices today are higher in supermarkets or drugstores because of this evolution.⁵

PRICE COMPETITION IN RETAIL GASOLINE MARKETS

Economists usually begin analysis of a particular market by assuming that the market resembles the standard, perfectly competitive model, where the good being sold is homogeneous, there are many atomistically small buyers and sellers who have perfect price information, and prices are perfectly flexible. The theoretical implications of a perfectly competitive market are that firms will earn no economic profit and operate at an efficient level. No type of government intervention in the market could improve upon the equilibrium attained by pure competition.

While no market contains *all* of the characteristics of the perfectly competitive ideal, the retail gasoline market seems to share *none* of these characteristics. For instance, while there are many different buyers of gasoline there are relatively few sellers in a given market. Each station does have some degree of market power, meaning that it is not constrained to charge the same price as its rivals.

Also, while the gasoline itself is largely homogeneous,⁶ firms can distinguish their product in other ways, such as by offering a superior location, easy credit, or desirable services such as full-service stations or inexpensive car washes. This, too, gives each seller of gasoline a modicum of market power.

Finally, despite laws in most states that require the posting of prices, neither consumers nor retailers have perfect price information at any time. Consumers cannot typically search costlessly for the lowest price in a market, and firms as well must expend resources trying to find their competitors' prices.

Nevertheless, it is a mistake in logic to argue that since gasoline markets do not approximate the efficient, perfectly competitive model, it is necessary for the government to intervene in the market. Most of the empirical research done on retail gasoline markets suggests that the primary problem in the market is not predatory pricing, but rather a propensity towards price collusion.

For instance, Borenstein and Shepard (1993) theorize that collusion in retail markets will be stronger and lead to higher prices when there are predictable demand increases and/or cost decreases. In the United States, the summer vacation season creates just such a demand increase. In such situations, they argue, the benefits of collusion are higher while the long-term costs of cheating the cartel scarcely change. They find reasonable support for their hypothesis using highly aggregated retail gasoline price data (by time and location) from the late 1980s.

A related issue concerns the so-called “rockets and feathers” phenomenon, where retail gasoline prices quickly rise but slowly fall in response to wholesale price changes. The fact that wholesale prices are the same for all gasoline stations and are common knowledge is one cause, but the Unfair Sales Act may exacerbate this problem. Borenstein, Cameron, and Gilbert (1992) examine data from several markets during short-term changes in wholesale gas prices and find that a retail price change asymmetry does exist that cannot be fully explained by wholesale prices, wholesaler market power, or inventory adjustment costs. They conclude that this must indicate market power among retailers. Bacon (1991) establishes a similar “rockets and feathers” pattern in UK gas prices. In short, the fact that there are certain predictable patterns in the demand for gasoline, combined with a wholesale cost shared by all retailers, creates an environment ripe for retailers to increase their retail markup and increase profits. Given that the minimum markup provision provides each retailer with the knowledge of what the gas price floor will be whenever wholesale prices change, the law undoubtedly exacerbates this problem.

HOW MUCH DOES THE UNFAIR SALES ACT INCREASE PRICES?

Our primary hypothesis is that the Unfair Sales Act, in combination with other laws inhibiting competition amongst gas stations in the State of Wisconsin, increases the price of gasoline. While at first glance it may seem easily testable, it is incorrect to merely take a random sample of gas prices at stations throughout Wisconsin and a few other states and compare the averages. The problem with this approach is that a random sample does not take into account such vagaries as tax differences, wholesale cost differences, transportation costs, and the effects of certain government mandates, such as the requirement to sell reformulated gasoline in major metropolitan areas. For instance, simple comparisons of the average price of gasoline in Wisconsin and Illinois, as reported by AAA, usually show that gasoline prices are similar in the two states. However, this difference is driven largely by the Chicago market, where wholesale costs, operating costs, and taxes are much higher than in most other markets.

A problem with a comparison of retail gasoline prices between Minnesota and Wisconsin is that Minnesota mandated the sale of gasoline blended with 10% ethanol in all stations in the state, mainly because of peculiar funding incentives found in federal transportation funding provisions (Kelly and Brannon, 1996). Given that wholesale prices for ethanol are roughly triple those of gasoline over the years of the study, this adds anywhere between five and ten cents to the price at the pump.⁷

A more relevant comparison across states requires a more highly disaggregated data set, meaning that the data are collected from different stations in different markets in a number of states relatively frequently. Rather than merely reporting an overall average price, the richness of the data can be exploited in many different ways to create a more meaningful comparison of relative gas prices across states and markets.

Towards that end, we obtained data from the Oil Price Information Service, which includes retail and wholesale prices from Beloit and Eau Claire, Wisconsin as well as Duluth, Minnesota from February 1996 until February 1999. Similar-sized cities were chosen in order to control for general operating costs. The city was chosen from a state contiguous to Wisconsin both for practicality and also because gasoline transportation costs are similar. Also, gasoline taxes in each state are similar, and Minnesota does not have a minimum-markup law.⁸ Beloit and Eau Claire were chosen in order to contrast the competition in one Wisconsin market that is close enough to the border that it must compete with stations in other states with one that does not face this threat. For the three years covered by our study, we have prices for 843 different dates. On average, we have about ten observations for each market for each date observed.

Since the penalties associated with violating the Unfair Sales Act recently increased, we use this as a natural experiment to determine how the change in the law affects prices. By comparing the average markup over the wholesale price at gasoline stations six months after the change in the law to the prior six months, we can get a good indication as to how the change in the law affected the level of competition in the gasoline markets. In order to control for other extraneous factors that may impinge on the overall retail gasoline markets, we use Duluth as our control market. Our hypothesis is that Beloit, with its location relatively close to an uncontrolled gasoline market, will exhibit more competition than Eau Claire before the law change, and thus will be disproportionately impacted subsequent to the law taking effect. We also expect to see the average markup of prices increase more in the Wisconsin markets than in Duluth.

A comparison of price markups is only one way to discern the effect of the Unfair Sales Act on gasoline markets. Another manifestation of higher gasoline prices and tacit collusion is a less dispersed distribution of prices within a given market. The market for retail gasoline is a monopolistically competitive market; while each station is selling what is basically a commodity, the sellers are able to differentiate their product by any one of a number of ways. The actual product offered by various stations differs by service, the type and price of any ancillary products, the availability of credit extended to the customer, and by the location of the station. These differences allow firms to increase prices above a rival retailer in the same market and still maintain sufficient sales.

If the Unfair Sales Act enhances the ability of retail gasoline stations to tacitly collude, then the markets would exhibit less price variability in spite of the difference in products across stations. Minor price differences make it difficult for collusion to exist, as it becomes difficult for firms to determine whether a lower-priced firm is attempting to undercut the market or simply has a less desirable product and thus has less market power with which to raise prices. The Federal Trade Commission used the existence of uniform pricing within certain markets as evidence of collusion in the Ethyl Corporation case (Carlton & Perloff, 1994), and economists used this same argument in the defeat of the minimum markup law in Montana (Romstad, 1998). Even without finding significantly higher prices in Wisconsin, lower dispersion in gasoline prices in the Eau Claire market relative to Beloit and Duluth would suggest that firms are able to use the law to coordinate gasoline prices in retail markets.

In order to determine whether the claim that the Unfair Sales Act actually protects small “mom and pop” stations, we are left to fewer devices. One problem is that before the recent changes in the Unfair Sales Act, the law actually worked to the detriment of stations that were independently owned. The previous law called for a 6% markup from the wholesale price; however, the “wholesale” price for a station that is owned and operated by the producer of the gasoline is an accounting construct and hence is somewhat artificial. The vertically integrated gas station could perpetually charge itself a lower wholesale price, and thus be able to permanently sell gasoline at a lower retail price without the independent station allowed to match its price.⁹ Hence, until this anomaly was fixed in the 1998 revision, the law had the perverse effect of actually facilitating predatory pricing.

Also, government mandates have significantly increased the cost of operating a gas station over the past ten years, and the recent December, 1998 deadline for stations to replace older tanks drove many stations out of business. Separating the myriad factors that affect the cost of operating a station as well as taking into account the vagaries of the Unfair Sales Act over time make it difficult to quantify the efficacy of the law at preserving small gas stations. Hence, calculating the proportion of stations that are independently owned and operated cannot really answer this question.

One broad measure, the number of stations per resident, fails to detect any glaring lack of competition in the state. Data from the National Petroleum News shows that Wisconsin has one station for every 775 residents, compared to Midwestern states such as Minnesota (1:1100 residents), Iowa (1:792), Indiana (1:750), and Illinois (1:2500).¹⁰

RESULTS

Dispersion of Gasoline Prices

Our contention is that if the strengthening of the Unfair Sales Act leads to a reduction in competition in Wisconsin gasoline markets, then we expect to see a lower dispersion of prices and higher markups in Wisconsin. We begin by examining the dispersion of prices in our three retail markets.

We test in two different ways our contention that the Unfair Sales Act should reduce the dispersion of prices. First, we compare the number of days in our sample when all the stations in a given market post the same price. We report the results for the entire three years of our data in Table 1. As we expect, Eau Claire has many more dates without any price variability in the dates reported, with such an event occurring 14% of the time. In our other three markets, such an occurrence is considerably more infrequent, with such an event occurring only 3% of the time in Beloit and 9.9% in Duluth. Again, we posit that the proximity of Beloit to Illinois makes its market more competitive than Eau Claire, our representative Wisconsin market.

The second method for comparing the overall dispersion of prices between the three markets is to compare the standard deviation of prices between the three markets, which we do in Table 2. Again, over the span of our data

**TABLE 1 PRICE VARIABILITY IN RETAIL GASOLINE MARKETS
1996-1999**

Market	Number of Dates with no price variance	Proportion of dates with no variance
Beloit	13	.030
Eau Clair	116	.138
Duluth	83	.099

**TABLE 2 DISPERSION IN RETAIL GASOLINE MARKETS
1996-1999**

Market	Standard Deviation	Gross Mean Price	Coefficient of Variation
Beloit	.028	1.17	2.41
Eau Clair	.009	1.20	0.74
Duluth	.015	1.21	1.21

**TABLE 3 AVERAGE MARKUP OF GASOLINE PRICES IN THE 6 MONTHS
BEFORE AND AFTER THE CHANGE IN THE UNFAIR SALES ACT**

Market	Before 1 August 1998	After 1 August	Change
Beloit	.109	.137	.028
Eau Clair	.136	.156	.020
Duluth	.139	.142	.003

set we find that Eau Claire has the lowest dispersion of prices, with a standard deviation of .0089 and a coefficient of variation of .74, both significantly below the other two markets.¹¹

In short, we detect a significant lack of price variation in the protected Wisconsin market, which we contend is a manifestation of the Unfair Sales Act and a signal of a lack of competitive pressures.

Changes in the Markup

Due to the myriad cost differences between stations that exist in different markets, the task of constructing a meaningful comparison of retail prices across different markets is beyond the level of this data. For instance, a higher retail price in Eau Claire than in Duluth might be due any one of a number of cost factors, not all of which we can precisely measure.

Instead, in order to discern how strengthening the penalties for violating the Unfair Sales Act affected prices in Wisconsin, we look at how the markup in retail prices over the wholesale price changed when the law went into effect on 1 August 1998. It is still necessary to control for exogenous factors such as taxes, transportation costs, and the general wholesale price of gasoline. By focusing on the change in the markup, any unmeasured factor does not impinge on our results if that factor did not change over the period of time of our study.

Our hypothesis is that Beloit, previously subject to a relatively competitive market, will see the greatest change in the average difference between wholesale and retail prices, excluding taxes. Duluth serves as our control city; if we see the average markup in the Duluth market increasing substantially, then it indicates that an exogenous factor is affecting our gas prices besides the change in the law.

Table 3 shows that while virtually no change occurs in the markup of the Duluth market, we see significant increases in the markup of prices in both Wisconsin markets. In Beloit, the markup increases almost three cents for the six months after the change in the law as compared to the previous six months, while in Eau Claire this change is about two cents. This number probably underestimates the true effect of the Unfair Sales Act a bit, since even before the penalties for violating the act increased, the law presumably impacted prices.

CONCLUSION

The main test of whether the Unfair Sales Act is serving its purpose ought to be whether prices are substantially lower due to its existence. If it is shown that this is not the case, then it should be acknowledged that the State of Wisconsin enacted a policy that implicitly taxes its citizens to the benefit of not just small independent gas stations, but also the large multinational oil companies that operate in Wisconsin. Our data suggest that the law has indeed kept gasoline prices higher than would otherwise be the case. We estimate that prices are approximately two cents to three cents higher, on average, in Wisconsin due to this law, translating into a cost of \$50 million to \$75 million per year for Wisconsin drivers. Also, the price of gasoline affects not only motorists but also consumers, given the sheer quantity of goods and services transported on the state's highways. Even if the Unfair Sales Act keeps gasoline prices a mere 2% higher, it amounts to an implicit tax on virtually everything bought in the state.

A political criticism that is invariably invoked whenever government proposes a new gasoline tax is that gas taxes (like virtually all consumption taxes) are regressive. This point is relevant here as well; since the amount of miles driven is more or less invariant with income, higher gas prices take the same amount of money out of the pockets of the poor as of the wealthy.

Those who fought to strengthen the penalties associated with violating the Unfair Sales Act are attacking a symptom rather than the cause of gas station woes. As we argued, the government's strict environmental regulations and the changing nature of the industry at large were the main causes of the gas station failures of the 1980s and 1990s. The data indicate that this trend has, for the most part, run its course. Whenever the government has attempted to arrest market forces, the result has been merely a postponing of the inevitable at a significant cost to consumers, which we submit is precisely the case here. The Unfair Sales Act benefits retail gas station owners at the expense of consumers and should be repealed.

Acknowledgments

We thank Jeff Bruss, Kevin McGee, Joel Fishkin, Christopher Thomas, Jim Crusius, and Dave Schmidt for their helpful comments, and Alison Stevens of the Oil Price Information Service for helping us acquire the necessary data.

NOTES

1. Wisconsin State Statute 100.30(2)(a) defines “Average posted terminal price” as “the average posted rack price, as published by a petroleum price reporting service, at which motor vehicle fuel is offered for sale at the close of business on the determination date by all refiners and wholesalers of motor vehicle fuel at a terminal plus any excise, sales or use taxes imposed on the motor vehicle fuel or on its sale, any cost incurred for transportation and any other charges that are not otherwise included in the average posted rack price. In this paragraph, ‘average’ means the arithmetic mean.”
2. In labor markets, such sentiment manifests itself today in the minimum wage law and the Davis-Bacon Act, which requires that government pay the “going” union wage rate to anyone working on a government construction project.
3. Vertically integrated firms that did not sell gas to other companies were exempt from this law, as they effectively had no wholesale price. Clark Oil Company did cease its outside sales for a while and in fact their ability to circumvent the law in such a way was a factor in getting the law strengthened.
4. The methods of calculating the number of stations has changed slightly over time; the earlier count excludes stations that receive less than half their income from gasoline, resulting undoubtedly in an underestimate of the true number of stations in the earlier years.
5. Those few that do suggest this have found an ear in the Wisconsin Legislature, as prices are circumscribed in these two markets as well in the state.
6. While gasoline chains constantly tout their gasoline as superior in advertising campaigns, few in the industry seem to believe that there is any material difference in the gasoline sold at different stations, and consumers tend to behave likewise.
7. For example, if the price of a gallon of gasoline from the refiner is \$.50 and the price of a gallon of ethanol is \$1.50 (both good approximations of true prices over our study) then replacing 1/10 of the gasoline (subtract \$.05) with ethanol (add \$.15) will increase the price by \$.10.
8. Even though we incorporate each state’s gas tax rate into the data analysis, there are other advantages to having similar taxes. Minnesota eliminated its minimum markup law in 1994. Due to the cost of acquiring the data, only a subset of the prices in each state could be used.
9. This was only allowed as long as the wholesaler did not sell gasoline to stations other than its own, upon which case its wholesale price for its own station was determined to be the same as the wholesale price it charged to others. The Clark Oil Company did stop selling its gasoline to non-Clark stations, presumably to avoid this restriction.
10. The presence of Chicago undoubtedly inflates this number.
11. Significant, in the parlance of statistics, means that we are 95% sure that the differences in these numbers are not attributable to mere chance. The coefficient of variation is simply the ratio of the standard deviation divided by the mean, multiplied by 100. When the means of the standard deviations are different, this is the preferred measure for comparing variability as it washes out the effect of the mean on the standard deviation.

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Keywords: Predatory Pricing, Energy, Regulation, Collusion

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ABOUT THE INSTITUTE

The **Wisconsin Policy Research Institute** is a not-for-profit institute established to study public-policy issues affecting the state of Wisconsin.

Under the new federalism, government policy increasingly is made at the state and local levels. These public-policy decisions affect the life of every citizen in the state. Our goal is to provide nonpartisan research on key issues affecting Wisconsinites, so that their elected representatives can make informed decisions to improve the quality of life and future of the state.

Our major priority is to increase the accountability of Wisconsin's government. State and local governments must be responsive to the citizenry, both in terms of the programs they devise and the tax money they spend. Accountability should apply in every area to which the state devotes the public's funds.

The Institute's agenda encompasses the following issues: education, welfare and social services, criminal justice, taxes and spending, and economic development.

We believe that the views of the citizens of Wisconsin should guide the decisions of government officials. To help accomplish this, we also conduct regular public-opinion polls that are designed to inform public officials about how the citizenry views major statewide issues. These polls are disseminated through the media and are made available to the general public and the legislative and executive branches of state government. It is essential that elected officials remember that all of the programs they create and all of the money they spend comes from the citizens of Wisconsin and is made available through their taxes. Public policy should reflect the real needs and concerns of all of the citizens of the state and not those of spe-