The Oil Industry's Ability to Affect American Elections

by

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Abstract

The purpose of this research is two-fold. The first purpose is to determine if historical U.S. domestic gasoline prices imply a causal relationship between gas prices and national elections. The rate of change in U.S. gasoline prices between August and November from 1976 to 2006 is analyzed to determine if there is a statistically significant difference between the rates of change dependent upon the existence of a national election. The second purpose of this research is to examine the reasons behind any year in which a rate of change for gasoline prices appears to be significantly different from the norm. Analysis is conducted to determine if the abnormal rate of change is in a direction that benefits candidates that belong to a political party which is historically more aligned with the interests of the oil industry.

A notion among many Americans exists that the oil industry has manipulated gasoline prices in the past for the purpose of affecting American election outcomes. The literature reviewed for this research illustrates that the oil industry is very involved in politics. The literature also illustrates that the oil industry has the ability to manipulate gasoline prices and that gasoline prices are a strong influence on the way individuals vote. The research shows that the oil industry has the motive and ability to manipulate gasoline prices for the purpose of attempting to affect American elections. Statistical analysis is, therefore, conducted to determine if there is empirical evidence that implies that gas prices actually have been manipulated in the past for the purpose of affecting election outcomes.

The analyses conducted for this research did not provide any statistically significant evidence that implies gas prices have been manipulated between 1976 and

2006 for the purpose of affecting American elections. Several years showcased a rate of change in gasoline prices from August to November that appeared to be significantly different than the normal rate of change. Of those years, only 1986 contained elements of a political landscape that supported the idea that the price change for that year was purposefully initiated for the purpose of affecting that year's national election.

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Chapter I: Introduction

Public administrators fulfill their designated functions in order to serve the people of their nation and the world. American public administrators serve within a Democracy. Elections are a critical function of democracy and, therefore, deserve much attention within the field of American public administration. Another topic that warrants discussion and analysis within public administration is the oil industry. This is especially true for the United States. The United States is heavily dependent upon the use of oil. The primary reason for the dependency on oil is the high use of gasoline for transportation within the United States. United States' consumers have both a high demand for gasoline and a price inelastic one. Price inelasticity refers to a situation where the demand of a product does not change relative to a change in the price of that product. In the United States, the price of gasoline is inelastic because as the price of gasoline rises, the demand does not fall by a relative manner (Wachs 2003). Public policy concerning the use of oil is a top priority among the American people and should be so among their elected officials. The public policy that is enacted concerning U.S. oil usage affects the economy, environment and national security. However, the effects of public policy are not always the guiding force behind its implementation. Public policy can be heavily influenced by the primary target that the policy is intended to affect. In the case of the United State's oil policy, oil companies provide influence. Oil companies overtly contribute to certain candidate's campaigns and have a strong lobby. Oil companies also have the ability to manipulate gasoline prices. Over the years, many Americans have questioned whether or not the oil company's ability to manipulate gasoline prices has been utilized in an attempt to elect officials that are more likely to

enact public policy which is favorable to oil companies. The concern behind this proposition is important and valid. The price American voters pay at the pump affects their personal finances and view of the economy. These are two factors which greatly affect how individuals vote, allowing for oil companies to influence elections. This concern fuels the purpose of research for this study.

Research Purpose

The purpose of this research is two-fold. The first purpose is to determine if historical U.S. domestic gasoline prices imply a causal relationship between gas prices and national elections. To determine if there is implication of a causal relationship, the rate of change between the average price of gasoline for August in a certain year and November of that same year is analyzed to determine if that rate of change is significantly different between years which contain a national election and those which do not. The analysis will also determine if the party in control of the Whitehouse, the Senate or the House of Representatives significantly affects the gas price rate of change. The second purpose of this research is to examine the reasons behind any year in which a rate of change for gasoline prices is statistically significant from the norm. This investigation of reasons will delve into the atmosphere surrounding the time periods which are outside of the norm, including whether gasoline prices rose or fell in a manner consistent with helping candidates supportive of the oil company's agenda. If these cases exist, strong support will be given to the idea that oil companies, that have the motive and ability to manipulate gasoline prices, have actually done so.

Report Organization

This report contains five chapters including this one. The second chapter will consist of a literature review that will provide an overview of oil industry operations, the political influence the oil industry has, and the ability the oil industry has to manipulate gas prices and how gas price manipulation could be used to affect elections. The third chapter is the Methodology chapter. This chapter describes the methods and measurements that are used to analyze if there is statistical evidence to support the notion that oil companies have manipulated gas prices in the past in attempts to affect election outcomes. The fourth chapter is the results chapter which describes the results of the empirical analysis and discusses these results. The fifth chapter is a conclusion which summarizes this report.

Chapter II: Literature Review

Introduction

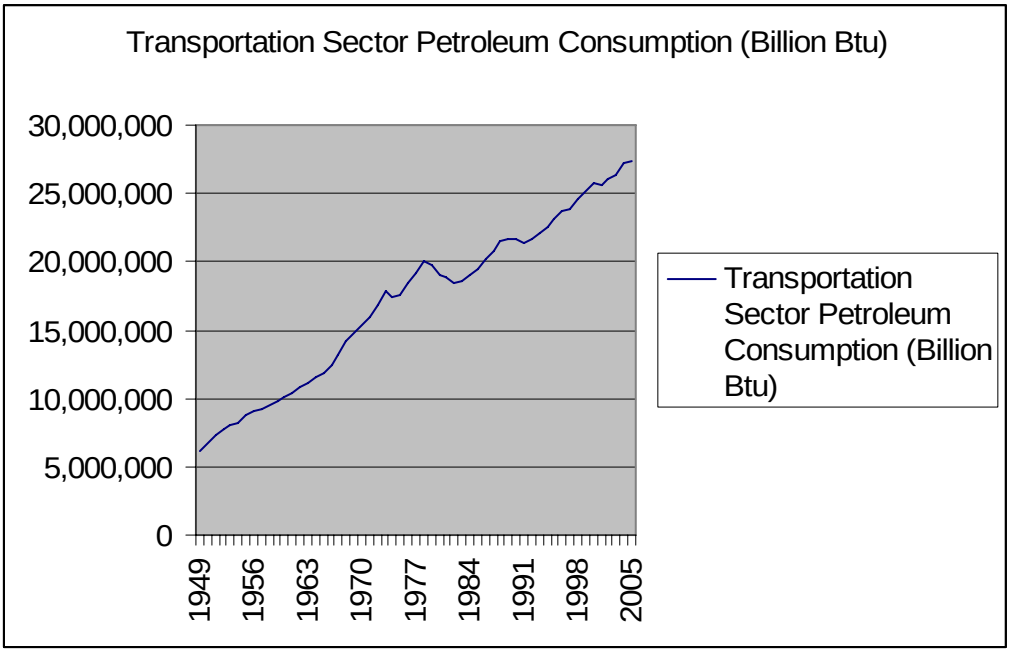
Three weeks before the 2006 mid-term elections a quick Google news search for "U.S. gas price politics" returns articles, op-ed pieces, and blog postings all commenting on the prices of U.S. gasoline during the lead-up to the election. Such search results include a November 22, 2006, posting from the blog *Blogging Stocks* entitled "Gasoline Prices: a failed election ploy?"; a November 11, 2006, article in the *Florida Today* newspaper by Scott Blake titled "Gas Prices Inching Back up: Some blame prices on election, but others point finger at the market"; and a November 14, 2006, article by Hil Anderson published on the website *Monsters and Critics*, titled "Oil conspiracies never die." The commentary provided through the articles is illustrative of a strong notion among many Americans that oil companies are able to manipulate gasoline prices and have done so in the past in attempts to affect national elections.

The purpose of this chapter is to investigate the scholarly literature concerning the United State's oil industry, and gasoline prices. This literature review is intended to explore the merits of the proposition that oil companies have both the motive and the capability of manipulating gas prices for the purpose of political gain. If the literature exhibits that such a proposition is valid, the stage will be set to test empirically whether implications are present which suggest manipulation of gasoline prices has occurred in the past.

The United State's Dependence on Oil

The United States has consistently been the largest consumer of petroleum products around the world. Between 1914 and 1974, world oil production steadily doubled every ten years and the United States has consistently remained the highest consumer of petroleum products. Figure 1 illustrates the increased usage of petroleum products by the United States in the Transportation Sector from 1949 to 2005.

Figure 1: Transportation Sector Petroleum Consumption (Billion Btu)



Source: Energy Information Agency. http://www.eia.doe.gov/emeu/aer/txt/stb0201e.xls.

Prior to 1954 the United States held an oil production advantage over other nations, but as the advantage dwindled so did the security that came with such an advantage and the implications of the United States' high use of oil began to emerge as a major concern of the United States Government (Masserson 1990). The United States is heavily dependent upon oil, mainly because of its high consumption and inelastic demand for gasoline. One of the principal reasons behind the United States' high demand is the transportation system, which has consistently absorbed more goods and passengers over the decades

(Wachs 2003). The immense growth of automobiles since the nineteen fifties coupled with dwindling domestic oil resources resulted in foreign dependence for oil. Aside from population growth, the design of the United States' transportation system has created a way of life and an economy built around our high use of roadways. During the nineteen fifties and sixties, "new superhighways were built in the major metropolitan areas that led to a dispersal of population from central cities; an interstate highway system that encouraged long-distance driving for business and pleasure was largely completed" (Glasner 1985, 75). Over the years, the transportation system design combined with a reduction in the price of gasoline (adjusted for inflation) increased the demand for fuel-intensive automobiles, thus furthering American dependence on gasoline. The environment created by the transportation system design and demand for fuel-intensive automobiles is not easily altered and has not been altered significantly since its creation. This environment has caused the United States to have a highly inelastic demand of gasoline.

The price elasticity of demand is the percent change in the quantity demanded of a product divided by the percent change in the price of that product. If the resulting number has an absolute value greater than 1, the product has an elastic demand and if the absolute value is less than 1, it has an inelastic demand (Varian 1999). Essentially, a product with inelastic demand will not easily lose its demand due to an increase in price. As gasoline prices rise, the demand for gasoline does not decline in a proportional manner. However, the inelastic demand for gasoline does not mean that a rise in the price of gasoline has no effect on consumption. Wheaton (1982) found that the demand for automobile ownership is not affected by gasoline price, but gasoline price does affect

fuel efficiency and driving habits. Further, the inelasticity of demand has been found stronger in the short-term than the long-term (GAO 1993; Graham and Glaister 2002). Gasoline demand starts to become more elastic as prolonged higher prices begin to affect personal finance. In a study of elasticity by Wheaton, the models he used assumed "a consistent picture of gasoline demand, first as being influenced exclusively by economic and not geographic factors, and second, as being more income than price elastic" (Wheaton 1982, 450). The assumption that gasoline demand is more income elastic than price elastic provides insight into why gasoline demand becomes more price elastic in the long run (Glasner 1985; Graham 2002). As prices remain at higher or lower levels for longer periods of time, there is a higher chance that a person's disposable income will become affected.

The primary reason for the high inelastic demand of gasoline is due to a lack of substitutes for gasoline. Without substitute fuel and transportation the multi-faceted impact on the American consumer of a change in gasoline prices will remain. As J.W. Anderson states, "two-thirds of the oil this country now uses is highway fuel. The anxiety and discomfort caused by fluctuating gasoline and diesel oil prices is another good reason to pursue the development of vehicles that run on other fuels, giving drivers alternatives" (2000, 6). A policy effective at reducing the demand for oil through means such as easily available and cost efficient forms of mass transit or alternative fuels for vehicles would reduce the value of oil. By reducing the value of oil, the power that oil companies have as a result of the value of oil will also diminish (GAO 1993, Glasner 1985).

How substitutes would affect the value of oil

External political factors play an important role in the way the oil and gas industry function. However, to an even greater extent, the role that the oil and gas industry plays in the American consumer's life is governed by the success of separate energy industries, due to the possibility of the supplanting of one energy source by another (Masserson 1990). The scarcity of oil and the lack of a comparable substitute constitute oil's immense value. According to a 2005 report from the United States Government Accountability Office,

> An important aspect of oil demand is the difficulty of substituting other sources of energy for some petroleum products – particularly gasoline. In the immediate term at least, gasoline has virtually no cost-effective substitutes, and therefore, increases in its price cause only small decreases in consumption (2005, 11).

There is a consensus that if a viable substitute did exist, the value of oil would decrease, and, therefore, so would the profits of oil companies (GAO 1993, Glasner 1985).

> In a world of scarcity, all economic values are relative. They reflect trade-offs people are willing to make or sacrifices they are prepared to incur. Thus if people compete for goods by offering to pay for them, every good or resource is likely to wind up in the possession of whomever is willing to pay for it (Glasner 1985, 13).

Glasner also contends that "you cannot give a product value just by making it with valuable resources. The value of the product is derived solely from its capacity to satisfy consumer wants. Hence resources are valuable insofar as they can be used to make products that consumers are willing to pay for" (1985, 170). Oil companies would have an interest in the United States not taking an effective policy towards diminishing demand for oil, including the development of viable substitutes, because such a policy would reduce the value of their products. Gasoline is currently extremely valuable

because there is not a cost-effective and widely available substitute. The high value of gasoline in conjunction with the inelastic demand of gasoline has created a market that is not greatly influenced by the competition among various vendors. Demand is so high that all vendors of gasoline are capable of making large profits. There is plenty of demand to go around. However, a great reduction in demand for gasoline would not only lower the price of gasoline through competition from substitutes but would also make gasoline vendors more competitive with one another. Lowering the demand would therefore greatly diminish profits. Thus, it would be in the interest of oil companies for elected officials to be against such a policy (Glasner 1985). The United States does not currently have an effective policy aimed at reducing the demand for oil. The lack of a policy contributes to the security and economic problems that exist regarding America's dependence on foreign oil (GAO 1993).

A major reason gasoline consumption is such a politically important topic is due to strong dependence on foreign oil to produce gasoline and a lack of policy to curtail this demand. Goel describes the nineteen nineties as non-advancing in terms of a domestic petroleum policy. He writes about our current state as having "no coherent policy response to the escalating security and environmental costs of America's petroleum use" (Goel 2004, 471). According to a paper in 2004 by Goel, "at the end of 2003, the Middle East held 63 percent of the world reserves, North America held 5.5 percent, and Europe, Latin America and Africa held about 9 percent each" (Goel 2004, 468). He also writes that "Americans consume far more energy, about 70 percent more on a relative basis, than their counterparts in the developed world" (Goel 2004, 469). Our dependence on foreign oil and the problems this dependence presents is widely known and accepted

(Goel 2004, GAO 1993, GAO 2005). Goel wonders why "the United States failed to enact a comprehensive policy aimed at curbing domestic petroleum consumption in the face of immense environmental and security costs" (Goel 2004, 467). This failure to enact such a policy has emitted a debate as to why an effective policy has not been enacted. This debate includes a strong argument that oil companies have prevented such a policy by political means. It is unbelievable to many that the United States has no policy intact that can move the U.S. away from a dependence on oil. The cornerstone of a policy to break the dependence on oil would be the introduction of substitutes for oil products which, if used, would provide benefits to consumers that outweigh the benefits of primarily using oil. The lack of such a policy provides credence to the idea that oil companies, who would be hurt by such a policy, are partly to blame for this.

Retail Gasoline Prices

There are many factors contributing to the price consumers pay at the pump for gasoline. The consumer is, however, accepting whatever price is given to them. Because of the lack of substitutes and the demand structure for gasoline in the U.S., the consumer is a "price-taker." Chouinard and Perloff write that "the effect of a shift in the demand curve on prices depends on costs and market structure. However, if wholesalers and retailers are price setters, an outward shift of the demand curve may, but not necessarily lead to higher prices" (2002, 4). The lack of price variability due to a shift in demand also provides the opportunity for price discrimination by firms which hold a large amount of market power. Since demand in this country is so high and inelastic, the opportunity exists that prices at the pump are not greatly influenced by an even further increase in

demand. Considering prices are possibly not affected by either an increase or decrease in demand, it is highly possible that prices are not set at true supply/demand equilibrium. Instead, there may be a factor vendors must consider when setting gas prices that is not measurable by economic numbers. This factor can be envisioned as a "glass ceiling" imposed by the will of the people. The price of gasoline must not exceed this "glass ceiling" in order to avoid responsive action that may reduce the value of oil. Robert Engler describes this process in the following way:

> The scale of decision making involved in the corporation's internal and external affairs has a wider consequence for the whole economy. Choices made out of the judgment of corporate needs evoke response and cause social dislocations among communities and nations. It thus becomes more difficult to separate private from the public aspects of its behavior. Once this is recognized, the major oil companies increasingly include in their calculations the factor of public opinion. Their concern is the continued acceptance of their roles and the maintenance of a social structure that will further this pattern of control (1961, 34).

The judgment required to maintain a desired social structure is not usually used as justification for price change, but visible factors in determining gas prices can be used to justify any changes if the end result is under this invisible line. These visible factors are grouped by Chouinard and Perloff into the following seven categories: "Demand, cost, seasonality (which affects both demand and cost), market power, taxes, pollution laws and vertical relations (which affect market power and cost)" (2002, 3). Wachs writes that "The pump price of gasoline and other motor fuels depends on changes in response to many factors in addition to tax rates: changes in crude oil prices, seasonality in the relationship between supply and demand, unusual geopolitical events" (Wachs 2003, 2-3). Borenstein and Shepard contend that "today's price change is a function of past price changes" (1993, 18-19). Glasner's (1985) arguments tend to focus more on the idea that

price is determined by the market, with little consequence as to production cost. What everyone seems to agree with, however, is that the main consequence for the price of gasoline is the price of oil and the actions of the oil industry.

Oil Prices and the Oil Industry

The price of oil is determined on the world market where world supply and demand forces interact to determine a price. However, market forces alone do not determine the price of oil. A large determinant is the actions of the Organization of Petroleum Exporting Countries (OPEC) and the oil producing countries that belong to OPEC. Quotas are initiated to a level pre-determined to create an acceptable price. Small differences in the precise determinations can cause large movements in price. In addition, the price of oil is dependent on world events and expectations and is, therefore, highly unpredictable (Anderson 2000; GAO 1993; GAO 2005). This volatile nature of the price of oil lends to a variable pricing of gasoline. Ultimately, just as in any business, it is up to vendors of gasoline to consider all aspects of pricing. The final price is not necessarily what an economic model of efficiency might predict. The fundamental role that oil companies play within the functionality of a system fueled by a necessity of its product and a lack of competition allows for the possibility of inefficient pricing as a means of future gains. Part of the reason the oil industry is presumed to have so much clout in the political process is that the industry has the unique ability to determine gas prices with limited pricing constraint. This limited constraint allows for the industry to utilize pricing as a means of adapting to a less hospitable environment and greater ability to exert power to prevent an inhospitable environment. The possibility of the oil industry

using pricing techniques strategically allows for the possible influence of politician's decisions regarding the oil industry. A politician may consider adverse consequences for themselves of a restrictive policy as opposed to the load of burden strictly belonging to the oil industry.

Oil industry operations

Goel states that "notwithstanding its commercial clout, it is the US industry's role as the harbinger of technological innovation in all facets of upstream and downstream operations that explains its structural power" (Goel 2004, 481). If the oil industry controls the most advanced technologies in the field, much like any industrial power, it behooves them to use the technology in ways that would leave them as the primary benefactor. The power the oil industry has by controlling the most advanced technologies can be taken away if an outside force were to develop even more advanced technologies. The nineteen seventies and nineteen eighties illustrated that the oil industry can be hurt financially if their power is diminished. A substantial change in power occurred during the nineteen seventies and nineteen eighties. Prior to the nineteen seventies, there were seven major oil companies that controlled the global network for supplying, pricing and marketing crude oil. However a 1993 GAO reports the structure was altered by the following events:

- The major oil companies lost their dominance of the oil market as oil-producing nations nationalized their oil fields. Independent oil companies and oil traders and brokers also increasingly competed with the major companies for crude supplies.
- The growth in trading on the spot market and the use of oil futures has meant that developments in the oil market are reflected rapidly in oil price changes.

- The U.S. government lifted its controls on domestic oil prices and thus integrated the domestic oil market with the world market (GAO 1993, 19).

The oil industry had to refine and adjust operations to regain lost power.

> In general, the oil industry is composed of both 'upstream' and 'downstream' operations. Upstream operations include exploring for oil, developing oil fields, and producing oil. Downstream operations include refining and marketing petroleum products at both the wholesale and retail levels (GAO 1993, 19).

The linkage of the upstream operations and the downstream operations within a single organization is termed "vertical integration". Vertical integration provides organizations with a higher level of control and power and the breadth of major oil companies interacting in this manner has provided fuel to arguments against the amount of power the oil industry yields.

> According to Chouinard and Perloff,
>
> There are three types of retail stations. First, a brand-name producer (such as Shell or Exxon) may vertically integrate into retailing, where its stations sell only the brand-name gasoline at a price determined by the manufacturer. Second, a lease contract restricts the lessee to sell only the manufacturer's brand of gasoline and dictates many operational decisions, but the lessee determines the retail price. Third, open dealers may agree to sell a specific brand of gasoline, but the dealers make all operational and pricing decisions" (Chouinard and Perloff 2002, 11).

Glasner attempts to dismiss the notion that vertical integration leads to monopoly power. Instead he focuses on the benefits of vertical integration as being able to "avoid exploitation by a non-integrated firm that had a monopoly at some stage in the production process." He tries to discredit the notion of gaining monopoly power by writing "if there is no monopoly at the production level, the refining level, or the marketing level, the mere fact that firms engage in all three stages cannot create

monopoly power that would not otherwise exist" (Glasner 1985, 256). His point that an integration of separate non-monopolistic fields cannot create monopolistic power is important and valid. However, there is no mention to the fact that vertical integration creates an inner collusive nature. By controlling every action from start to finish, it is only the final price of competitors that one must compete against. A vertically integrated company can more easily set a price at a cost covering minimum in order to drive prices lower. Vertical integration has become more prominent, especially among the biggest oil companies. The general public is cognitive of this (Exxon mobile sells gasoline), even if they may not realize the implications. Vertical integration provides more ability to set a price at what a company wants, for whatever objective they want. Profit is the usual objective, but political gain could easily be garnered.

Conceptual Framework

The literature thus far has illustrated the sources behind the power that oil companies have and insights into the operations of the oil industry. It has provided examples of logic behind the proposition that gasoline prices are manipulated for purposes of affecting elections and motive to do just that. This literature review will now focus on the political landscape that oil companies and government function within and the capability to actually manipulate gasoline prices. Further, it will illustrate whether gas prices actually do have an effect on election outcomes. The following conceptual framework table (Table 1) contains the formal hypothesis that will be tested empirically. While the literature provides motive, capability and presumption that gasoline prices have been manipulated in the past for the purpose of affecting elections,

empirical analysis will provide statistical evidence in support or non-support for the hypothesis.

Table 1: Conceptual Framework

Formal Hypothesis I	Supporting Literature
Gasoline prices have been manipulated during national elections in order to influence the outcomes of elections.	Goel 2004, Wachs 2003, Haller and Helmut 1994, GAO 2005, Glasner 1985, Lewis-Beck and Nadeau 2001, Markus 1992

Markets and political process as alternative mechanisms for competing to control energy.

Information yields power, and so anyone who specializes in an area has a power advantage within that area over someone who does not. The specialization of oil has given power to those who specialize in it, power that yields cooperation from the Government (Glasner 1985, 6). As Glasner aptly puts it, "only if we recognize that markets and the political process are merely alternative mechanisms for competing to control energy and other scarce resources can we begin to think sensibly about how decisions to allocate those resources ought to be made" (1985, 251-252).

The ability of the government to enact a policy that allows more governmental control over the energy industry has many hurdles. The institutional nature of both the political realm and the production realm of oil are placed against one another. Both yield great power which could help or hurt the other. The status quo is the result of a balance of powers and a shift in this balance would lead to great fracture on both ends (Goel 2004; Glasner 1985).

Political power of oil companies

Oil companies have made it extremely difficult for the United States government to enact an energy policy that would be in the best national interest if the policy is also detrimental to the oil industry. Stability provides favorable views from the public of the overall political landscape at the time of the stability. Attempts to change the energy policy could lead to an effort by oil companies to destabilize things, thus weakening the political institution and encouraging change for the political landscape. The solid entanglements of the political institution have created a lack of political motivation to change. This lack of motivation to change is no more evident than in the United States' energy policy. Energy is central to the development of each nation, and, therefore, each nation has a duty to recognize the strengths, weaknesses, opportunities and threats of an energy policy. This recognition includes the limits on resources, desired economic development and type of growth that an energy policy will pursue, along with national security threats. The costs of developing and implementing an energy policy are great. Due to these great costs, investments for research and development for energy sources eventually force a nation to choose one source of energy as a priority (Masserson 1990). The costs of changing a nation's choice for their source of energy furthers the lack of will for change, as do the procedural aspects of change. In the United States, change of this sort must go through several jurisdictions before accepted. Oil companies need only gain support from some of these jurisdictions to prevent an undesirable change. While the executive branch of the U.S. government yields the political, military and economic elements necessary for the oil industry to succeed, the oil industry has the money to back opponents of the executive, thus weakening the executive branches'

power because the money gives strength to the opponents of the executive. Possibly even by having other branches of the government gain control by the opposition party, the oil industry can create a breadth of opposing ideas, something amenable to a lack of change (Goel 2004).

While oil companies tend to exert their political power in favor of Republicans, Goel points out that

> It is crucial to appreciate that the extension of this support transcends political party, ideology or foreign policy agenda. This may seem surprising since the industry has a strong preference for the Republican administrations: George W. Bush received US $1.9 million from the industry, thirteen times more than Al Gore in the 2000 campaign. However, while differing administrations may focus on a given geographical region or even favour certain companies, the overall thrust remains unaltered. For example, it is highly likely that the Clinton administration's support of the Majors' mergers was due to a realization that bigger size was essential to gaining negotiating leverage and managing the risk associated with operating in Russia, the Caspian and West Africa (Goel 2004, 483).

Goel illustrates that while the oil industry seems to prefer the Republican Party, in actuality they prefer those who will vote in favor of them and that just happens to be the Republican Party more often than not. The oil industry's support across political parties also illustrates the far reaching power the oil industry yields and has used in the past to support candidates one way or the other. Robert Engler (1961) paints a clearer picture that it is not a Political Party the oil industry favors, but rather the ideology of conservatism over liberalism. The oil industry reaches out overtly in many ways, but no more so than through the extensive channels of contact provided by their lobby and campaign contributions. Oil companies accept politics as a part of good management to sustain their successes. It is hard to lay blame on an industry which follows a system that is necessary for prolonged success. It is not the business practices that fail the

interests of a nation but rather the electoral system. Contributions of the oil industry are so important because of the enormous amount of money it takes to be successful in a campaign. Long striving cycles are hard to break, especially in this case, as political decisions create wealth for the oil industry and that wealth re-circulates to allow for those political decisions.

Goel illustrates the problems the oil industry could face if unsuccessful in garnering the desired political support.

> Any study of oil industry influence must recognize that corporate political power is not static, but ebbs and flows. This concept of fluctuating influence suggests that, although oil interests may have successfully defended their agenda during a given period, continued success is not a deterministic affair. Major shifts in public opinion have eroded the influence of such entrenched interests (2004, 473-474).

Public opinion is key to power, because public opinion determines who is in power. Public opinion assists politicians in their decisions regarding public policy. For example gas taxes garner a lot of public attention and discourse. Gas taxes create great attention because of a fear of higher prices at the pump. Many politicians fear supporting an increase in gas taxes because the public may view such a policy as raising the cost of gasoline (Wachs 2003; Haller and Helmut 1994; GAO 2005). The fear the public has about an increase in gasoline prices illustrates the opportunity that gas price increases or decreases could be used to change public opinion. If an oil company were able to manipulate prices before an election, they may raise them to try and get voters to have a bad public opinion of those currently in charge. Similarly, they could lower the prices to create an image of strong economic prosperity. A change in gas prices is the most immediate way the American people are affected by energy policy. Gas price

manipulation would, therefore, be a highly effective tool that oil companies could use to manipulate public opinion.

Power of government to enact energy policy

The power of the government and the oil industry concerning energy tend to offset and the status quo remains. However, at times, the government does exert change into the system. This change always comes as a reactive measure to public opinion (Ikenberry 1988). It appears more and more that both the oil industry and our Government try to garner public opinion, but once public opinion sways, so will the current policy. The strongest form of government policy interaction was during the nineteen seventies when price controls were administered. Price controls were enacted because of spiraling high prices caused by the Arab Oil Embargo. While these controls appear to have kept prices down, it can be argued whether or not prices actually were kept down as a result of price controls. There is consensus, however, that the price controls did cause inefficiencies in the system and caused harm to oil companies (Anderson 2000; GAO 1993; Glasner 1985). 1975 marked the beginning of the end to price controls. "Especially after 1978, executive officials came to embrace the decontrol of domestic oil prices as the single most important tool with which to address the problem of energy adjustment" (Ikenberry 1988, 165).

Many forms of legislation have been passed over the years. The nineteen seventies brought rise to appropriations from Congress in the form of research and development. The effects were intended to be marginal but marginal changes over extended periods of time can add up to something significant (Ikenberry, 1988). In

1982, the Petroleum Allocation Act was passed but vetoed by President Reagan. An analysis of members who voted for the act reveals strong support from those who had strong agriculturally based constituencies which the Act would have adversely affected. The vote analysis provides an example of elected officials ultimately being held accountable by those who elect them (Glasner 1985). There was also "the implementation of the Democrat-driven Energy Policy Act of 1992 – the only major piece of strategy legislation passed during the decade" (Goel 2004, 471). This legislation was impeded by a hostile Congress in 1994.

There is also always the idea of raising gasoline taxes and thus reducing demand. A policy of gas price increases is difficult to enact, however, as public perception can be easily persuaded to disapprove of such an action (Glasner 1985). Oil companies can easily pass the tax price completely on to the consumer because of the inelasticity of demand. Higher gas taxes are very unpopular because it is perceived to affect the individual consumer in the short term. The perception that gasoline prices affect individual consumers in the short term provides more support to the idea that short term gas price manipulation can affect elections.

Gasoline prices, the economy and elections

Gasoline prices play an important role in the United States economy, as the high value of gasoline has far reaching effects throughout the economic structure (Glasner 1985; Wheaton 1982; Anderson 2000). The scarcity of gasoline and the lack of other alternatives force the U.S. consumer to spend less money on non-essential items when a sharp increase in the price of gasoline occurs. Similarly, a decrease of gasoline prices

could spur spending in other areas of the economy. The importance of low gasoline prices is further supported by the aversion to raise taxes on gasoline (Goel 2004; Wachs 2003; GAO 2005). The common aversion to a raise in gasoline taxes illustrates a common understanding of how important gas prices are to the economy and to elections.

Economic expectations of voters

Haller and Helmut explain that

> In trying to bend the future economy to its will, government would enjoy much leeway if people did not take account of such efforts in forming their expectations. But perhaps that is exactly how the general public, with its limited understanding of economic policymaking (the 'peasant' rather than the 'banker'), may behave (1994, 631).

Citizens bestow credit for a good economy on the government's makeup that is in power during a period in time where the majority of citizens view the economy as on the right track. The economic expectations of voters deeply influence their vote, and the price of gasoline is one of the top concerns of voters (Haller and Helmut 1994). As individuals create their expectations concerning the future of the economy, they take into consideration past conditions and current conditions, but they tend to believe bad times will end quickly while good times will sustain themselves over a long period (Haller and Helmut 1994; GAO 2005; Lewis-Beck and Nadeau 2001). As a voter considers how their vote will affect the economy, their economic expectations play a central role (Haller and Helmut 1994).

American consumers are accepting of the constant fluctuation of gas prices, but a sustained period of change in gas prices in a single direction, can affect, a voter's

economic expectation and, therefore, their vote (Haller and Helmut 1994; Glasner 1985; Graham and Glaister 2002; Walstad 1997). A sustained change in gas prices is especially important because such a change immediately affects consumers' personal finances. In a study about the effect of personal finances, it was found that "voters who see their own pocketbook as improved are slightly more likely to stay with the incumbent" (Lewis-Beck and Nadeau 2001, 164). In another study, this connection was found to be significant. Markus controlled for fluctuations in the national economy and found that "perceived changes in a voter's personal financial well-being influence the voter's electoral calculus significantly" (Markus 1992, 833). Most studies that have been conducted are concerned with the effects of economic conditions on presidential elections. Yet, the findings are easily transferred to all elections. For example Lewis-Beck and Nadeau wrote the following insightful determinations.

> In any mature democratic system, the basic psychology of economic voting may seem simple enough. Responsibility is attributed to the political economic manager. When the economy is doing well, the manager is rewarded with support; when the economy is doing badly, that support goes elsewhere (Lewis-Beck and Nadeau 2001, 168-169).

While this passage is mainly in reference to presidential elections, the statement that "support goes elsewhere" is easily applied to political opponents of the president. In addition to holding the President accountable during presidential elections by electing an individual opposed to the current economic policy of the Presidency, congressional elections provide the opportunity to elect members of Congress who may be able to change the current economic policy.

> Voters, to the extent they observe the president has partisan control, are less hesitant to attribute to him or her responsibility for economic management. They reason that he or she has the power to get programs through Congress and so reward or punish subsequent economic

> performance heavily at the ballot box (Lewis-Beck and Nadeau 2001, 169).

The oil industry has a unique power to sway a vote because gas prices have a major effect on the economy, and the economy has a significant effect on elections. This power is non-existent, however, if it is not possible to manipulate gasoline prices.

The ability of the oil industry to set gasoline prices

Assuming the oil industry has the ability to manipulate gas prices, the research has shown thus far that reason exists to manipulate gas prices for political gain. The question now is whether or not the ability for the oil industry to manipulate gas prices does actually exist.

In the past, vertically integrated oil companies have been accused of gas price manipulation for the purpose of predatory practices. The main argument is that oil companies lower prices to weed out smaller competitors and then have the ability to increase the price gasoline as they see fit (Glasner 1985). In addition, integrated oil companies enjoy immense market power at retail stations, allowing them to more easily set the market price and fend off low-price competitors (GAO 1993; Chouinard and Perloff 2002; GAO 2005; Anderson 2000). Price collusion between oil companies has also been shown to be possible (Borenstein and Shepard 1993). Another important element of gasoline pricing is that the market power that any number of large integrated oil companies has allows one company by itself to lead the direction of prices upward or downward (GAO 1993). So, therefore, it would only be necessary for one company to implement a manipulation of gas prices in order to affect an election, and it is very possible that a large integrated company could manipulate gas prices.

Conclusion

"People are more likely to conclude that a good system is being misused – either deliberatively by corrupt officials or unintentionally by incompetent ones" (Glasner 1985, 262-263). Glasner also writes that "those who profit from the misfortune of others are commonly regarded with reprehension and scorn. To avoid reprobation, one must demonstrate that the profit was the result of some evident merit, effort, or sacrifice on one's own part" (1985, 212). People tend to look wary of various situations that result in dramatic successes for one party. This topic garners extra attention because it affects personal finance and politics, two very contentious topics.

This research has not shown that there is a consensus or proof that oil companies have tried to affect elections through gas price manipulation in the past, but it has shown that the capability exists, as do the reasons, for an oil company to pursue such measures. The findings of the literature warrants an empirical investigation to determine if there is statistical evidence to support the proposition that gasoline prices have been manipulated in the past for the purpose of affecting American elections. The power that oil companies possess and utilize has very extensive consequences. Through both Republican presidential administrations and Democratic ones, the U.S. government has safeguarded American petroleum firms abroad both diplomatically and militarily (Chester 1983). If the exertion of these governmental efforts is based upon deceit, then these measures also are filled with deceit and America's interests lie in discovering the deceit.

Chapter III: Methodology

For this research, information was collected on average U.S. gasoline and oil per barrel prices for the months of August and November for each year between 1976 and 2006. These prices were obtained from the United States Energy Information Agency (EIA). The average gasoline prices were compiled by the agency from retail prices at cities across the United States. The type of gasoline was regular unleaded, which is the most commonly used gasoline by American consumers. The prices included taxes. The oil prices were a compilation of domestic and international prices that U.S. refiners paid for crude oil. Information was also collected on which party was in control of the Presidency, the Senate and the House of Representatives during these time periods. Using these data, an independent samples t-test was run to determine if the average absolute value of the percentage change in gas prices was significantly different between election and non-election years. If the t-test shows there was a significant difference in the percentage change of gasoline prices between election and non-election years, statistical evidence would imply an aggregate relationship between the change in gas prices from August to November and national elections. In addition, a multiple regression analysis was run to determine if there was statistical evidence that implied gas price manipulation for the purpose of affecting election outcomes. These tests are intended to determine if the following hypothesis is valid:

H_1: Gasoline prices have been manipulated during national elections in order to influence the outcomes of elections.

Independent Samples t-test

An independent samples t-test is used to determine if the means of two independent groups are significantly different. The t-test conducted for this research, reveals if the expected mean percentage change in average gasoline prices from August to November is significantly different for years that have a national election versus years that do not. The expected values for the research are based upon data inputs from 1976 to 2006. In general, the larger the samples of data, the more confident one can be about the expected mean values of each group and how they relate to one another (Norusis 2006). For this research, the computer program Statistical Package for the Social Sciences (SPSS) was utilized to perform an independent samples t-test to determine if the rate of change in gasoline prices was significantly different between election and non-election years. The variable that is analyzed is the absolute value of the rate of change in gasoline prices, so that one could see if the entire value of change was different regardless of the direction of that change. If a significant difference does appear, further analysis could occur to determine if the direction of those changes was consistent with electing officials more aligned with oil industry interests.

Multiple Regression Analysis

"Regression analysis is a method of data analysis in which the relationships among variables are represented in the form of an equation, called a regression equation." (Babbie 2004, 448) The inputs of the equation is the data collected for several years of each independent and dependent variable. Through an analysis of the inputs, a prediction can be made about the value of a dependent variable within an environment of certain

independent variables. The following table illustrates how the data collected for analysis was operationalized.

Table 2: Operationalization Table

Variables (Unit of Measure)	Measurement
Dependent Variable	
Rate of change for average U.S. Gas Prices (1976 – 2006)	$\frac{(G_n - G_a)}{G_a}$ G_n= November Average Gas Price G_a = August Average Gas Price
Independent Variable	
Rate of change for average cost of crude oil (1976 – 2006)	$\frac{(O_n - O_a)}{O_a}$ O_n= November Average Oil Price O_a = August Average Oil Price
National Election year (0,1 variable)	1 = National Election year 0 = Non-election year
Incumbent President political party (0,1 variable)	1 = Republican 0 = Democrat
Political Party in control of House (0,1 variable)	1 = Republican 0 = Democrat
Political Party in control of Senate (0,1 variable)	1 = Republican 0 = Democrat

The dependent variable of the analysis is the rate of change between the average August price of gasoline and the average November price of gasoline for each year from 1976 to 2006. The research conducted for this paper was unable to recover data for years prior to 1976 that would have been consistent in form with the data analyzed from 1976 to 2006. The time periods of measurement were chosen in order to encapsulate an immediate period of time leading up to elections. By analyzing the percentage change for a short period of time, the affects of inflation and taxes were minimized. The

independent variables for analysis included whether the year was a national election year, if the incumbent president was a Republican or Democrat, if the Democratic Party or the Republican Party controlled the House of Representatives and if the political party in control of the Senate was the Democratic Party or Republican Party. The rate of change between the average price of crude oil between August and November for each year of analysis was also an independent variable.

Two multiple regression models were performed. One of the models considered all independent variables listed in the Operationalization Table. The other model did not take into consideration the rate of change in oil prices for the same August/November periods. The separate models were run because the highest contributor to the change in gasoline prices is a change in oil prices. By removing the price of oil as an independent variable, it allowed for a clearer picture of how the other independent variables might affect the rate of change for gasoline prices during the August/November period.

Chapter IV: Results

The data that were used to run the analysis is illustrated in Table 5 in the Appendix. The first question to be answered is whether or not the average percentage change in gasoline prices from August to November was significantly different during election years as compared to non-election years from 1976 to 2006. Table 3 shows what these averages were and the difference between the averages.

Table 3: Average Absolute Value of Percentage change in Gasoline Prices from August to November (1975-2006) for Election Years and Non-Election Years

	Election Year (N=16)	Non-Election Year (N=15)	Difference in Means
Mean Absolute Value of Percentage Change in Gasoline Prices from August to November (1976-2006)	0.0437	0.036	0.0077

During election years, the mean percentage change in gasoline prices from August to November is 0.0437%. During non-election years, the mean percentage change for gasoline prices from August to November is 0.036%. The difference between the means is 0.0077%. An independent samples t-test was run to determine if the difference between the percentage change in election versus non-election years was significant. The results showed that the difference was not significant.

Next, two multiple regression analyses were run to determine if the change in gasoline prices from August to November, could be predicted by political landscape for each year. Table 4 shows the results of this analysis.

Table 4: Regression Analysis Models I and II

	Model I	Model II
Percentage Change in Oil	0.439	NA
National Election Year	0.007	0.02
Party in Control of Presidency	0.001	-0.032
Party in Control of Senate	-0.037	-0.009
Party in Control of House	0.002	-0.04
Constant	-0.003	0.014
F	8.317	1.443
R^2	0.59	0.182

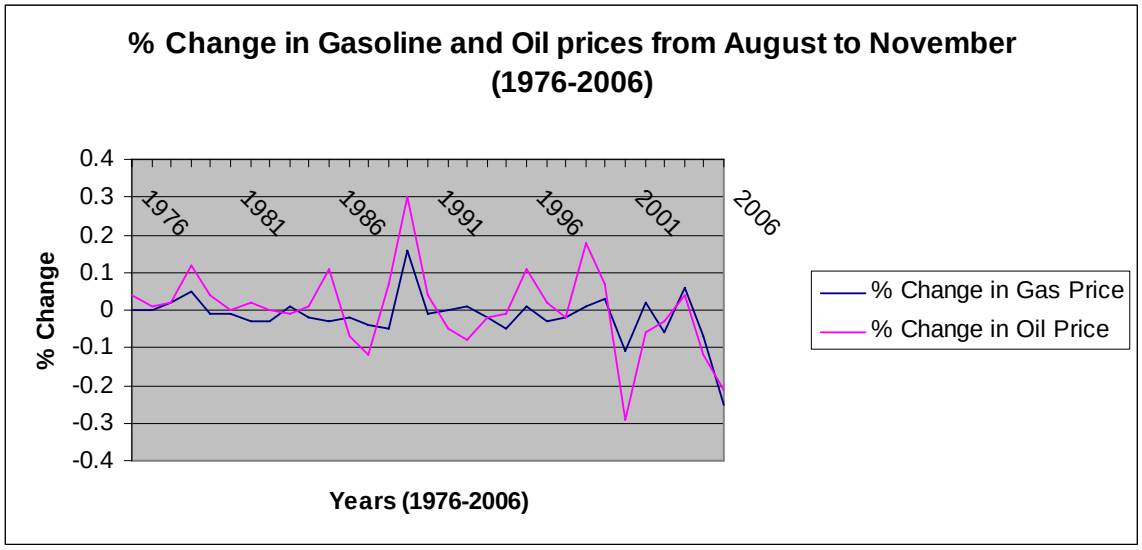
The first multiple regression (Model I) run includes the percentage change in the price of oil between August and November as an independent variable, while the second multiple regression (Model II) did not include this as an independent variable. The values listed in the body of Table 4 represent partial regression coefficients. The partial regression coefficient for a variable indicates how much the value of the dependent variable changes when the value of that independent variable increases by 1 and the values of the other independent variables do not change. For example, the coefficient for the percentage change in oil in Model I, shows that the expected percentage change in gasoline increases by a rate of .439 for a change of 1 percent in the price rate of change for oil. For the remaining independent variables which are dichotomous, the coefficient shows the expected increase or decrease when the independent variable is 1. For this case, the independent variables are 1 if it is a national election year, Republicans control the Presidency, Republicans control the Senate or Republicans control the House of Representatives. The values for R^2 represent the percentage of the observed variability of the dependent variable, which can be explained by the independent variables included in each model. If the value of F is statistically significant, it signifies that there is a linear

relationship between the dependent variable and at least one of the independent variables. The constant value illustrates the change in the dependent variable, excluding influence from all other variables (Norusis, 2006). In both models I and II, none of the variables are statistically significant. Therefore, none of the statistical analysis that was conducted for this research supports the hypothesis that gasoline prices have been manipulated in the past to affect election outcomes. Furthermore, the changes in gas prices reflect very closely the changes in oil prices for the same periods. Unless the oil industry has the ability to manipulate oil prices, gas price manipulation would only be evident if the change in gasoline prices differed greatly from the change in oil prices for the same comparative periods. The research for this report has not come across any literature to support the idea that the oil industry has the ability to manipulate the price of oil. Figure 1 shows graphically how closely related the change in average gas price is with the change in average oil prices between August and November for the years of 1976 to 2006.

Figure 2 shows, there are a few years between 1976 and 2006 that standout. These years and a summary of the qualitative analysis performed for each year is illustrated in Table 5. In years 1990, 2001, and 2006 extreme changes in the gas price rate of change between August and November are present. In addition, 1990 and 2006 were congressional election years where the direction of the gas prices would have helped Republicans. In 1990, the Senate and House of Representatives were controlled by Democrats, and the price of gasoline drastically increased. In 2006, the House of Representatives and the Senate were controlled by Republicans, and gas prices sharply declined. In 2006, the precipitous decline in gas prices was accompanied with a sharp

decline in oil prices, but in 1990, the strong increase in gas prices was not accompanied by a drastic increase in oil prices. These years may signify that gas prices were manipulated, but it is unlikely since in 1990 the Presidency was held by a Republican and as the literature showed, voters who are influenced because of economic conditions usually hold the president accountable for the shape of the economy. In 2006, oil prices declined similarly to gas prices. Therefore, if manipulation was present, the price of oil must have been manipulated so as to pressure the decline in gas prices. Once again, the literature has not shown the ability of the oil industry to manipulate oil prices.

Figure 2



There are also six years that stand out because the change in gas prices did not coincide with a similar change in oil prices. These years were 1986, 1989, 1990, 1993, 1996 and 2001. Of these years, only 1986, 1990 and 1996 were national election years. Nineteen Ninety has already been discussed.

Table 5: Qualitative analysis of years with changes in gas prices sharply different than the norm

Year	Election Year?	Analysis Summary	Implies Gas Price Manipulation?
1986	Yes	The change in gasoline prices did not coincide with a similar change in oil prices. This was a Congressional election year and the Republican Party held the Whitehouse and the Senate, while Democrats controlled the House of Representatives. While oil increased 0.11%, gas prices declined by .03%. The decline in gas prices would have helped the Republican Party. This situation supports the hypothesis that gasoline prices were manipulated to affect the election.	Yes
1989	No	N/A	N/A
1990	Yes	The price of gasoline sharply increased. Nineteen ninety was a congressional election year and the Democrats controlled the Senate and the House of Representatives. Gas price manipulation was unlikely because there was a similar increase in oil prices and because the presidency was held by a Republican.	No
1993	No	N/A	N/A
1996	Yes	The change in gasoline prices did not coincide with a similar change in oil prices. The percentage change in oil was .11%, but the percentage change in gasoline prices was only .01%. Nineteen ninety-six was a Presidential and Congressional election year. The presidency was held by a Democrat and the Senate and House were controlled by Republicans. The hypothesis is not supported because the change in gas prices would have helped the Democrats.	No
2001	No	N/A	N/A

The year 1986 was a Congressional election year, and the Republican Party held the Whitehouse and the Senate, while Democrats controlled the House of Representatives. While oil increased by 0.11 %, gas prices declined by .03 %. The decline in gas prices would have helped the Republican Party, since the presidency was held by a Republican.

Considering gas prices declined when oil prices increased, 1986 is the first case that provides statistical support that implies gasoline prices have been manipulated to affect elections. If gas prices were manipulated in 1986 to assist Republicans, it did not work. Democrats retained control of the House of Representatives during the election and gained control of the Senate. Nineteen ninety-six was a presidential and congressional election year. The Presidency was controlled by the Democratic Party, while both the Senate and House of Representatives were controlled by the Republican Party. The percentage change in oil price from August to November of 1996 was .11%, but the percentage change in gas prices was only .01%. This discrepancy would not support the idea of gas price manipulation for the purpose of electing individuals more aligned with the interests of the oil industry because it would have helped the Democratic Party retain control of the Whitehouse and possibly hurt the Republican Party's bid to retain control of the Senate and House of Representatives. The 1996 election did not result in a shift of power in any branch of the government.

The statistical analysis that was conducted for this report did not provide any statistically significant findings that would support the hypothesis that gas prices have been manipulated to affect elections. Out of the thirty-one years of analysis, only 1986 illustrates a case where the possibility of gas price manipulation has statistical support. While the findings of this report are important and informative, there are shortcomings. The analysis provides superficial analysis to determine if there is any highly visible statistical evidence of gas price manipulation. Gas price manipulation is a serious subject, and if the oil industry was to participate in such a venture, it is likely that several steps would be taken to cover their intention. To further test the hypothesis that gas

prices have been manipulated to affect elections, a more in depth analysis would need to be undertaken. An analysis that incorporates more variables that contribute to the price of gasoline and a deeper analysis on how changes in gasoline prices have affected the political landscape over the years may provide different and more insightful results.

Chapter V: Conclusion

Commentary and literature has illustrated there is an idea among many Americans that domestic gasoline prices have been manipulated in the past in order to affect election outcomes. The purpose of this research was to identify if evidence exists that implies the idea of gas price manipulation for the purpose of affecting election outcomes is true. A literature review provided findings consistent with the idea. The literature showed deep involvement in the political process by the oil industry. Political involvement by the oil industry is viewed as necessary because government policy involving the industry can be highly beneficial or detrimental to the industry. The literature also showed the ability for large integrated oil companies to manipulate gasoline prices. The possible manipulation of gasoline prices was shown to have the ability to affect election outcomes. Gasoline prices can affect the way Americans view their personal financial situation and the way they view their personal financial situation can affect their vote. The literature showed that the oil industry has the motive and ability to affect elections through the manipulation of gas prices.

To determine if evidence existed that implies gas prices actually have been manipulated, two forms of statistical analysis were run. First, an independent samples t-test was run to determine if the rate of change in the price of gasoline from August to November was significantly different between years that contained an election and years that did not from 1976 through 2006. The results, displayed in Table 3, show that on average the rate of change during election years is a non-statistically significant difference of 0.0077%. Second, a multiple regression analysis was run to determine if an implied causal relationship could be identified between the rate of change for gasoline

prices and any of the following independent variables: the rate of change in the price of oil for the same time periods, if the year was a national election year, if the Senate was controlled by the Republican Party or the Democratic Party, if the House of Representatives was controlled by the Republican Party or the Democratic Party and if the Presidency was controlled by the Republican Party or the Democratic Party. The results, illustrated in Table 4, did not provide any statistically significant findings that would implicate a causal relationship between the rate of change in gasoline prices and any of the independent variables.

To further investigate if evidence existed that implied gas prices have been manipulated to affect election outcomes, any years that appeared to exhibit a rate of change in gasoline prices that was much sharper than the normal change, underwent a qualitative analysis. These years and analysis are illustrated in Table 5. Only 1986 contained qualities that provide support to the notion that gasoline prices were manipulated to affect the election during that year.

There were several limitations to the scope of analysis that this research was able to achieve, and a more in depth analysis may yield different results. This report does, however, showcase how much power the oil industry does have and how that power affects the well-being of the United States. It is important that this power always have oversight so that abuse cannot easily occur.

Appendix I

Table 6: Gasoline and Oil Prices (1976-2006)

Year	August Gas Price (Cents per Gallon)	November Gas Price (Cents per Gallon)	% Change in Gas Price	August Oil Price ($ per Barrel)	November Oil Price ($ per Barrel)	% Change in Oil Price
1976	62.8	62.9	0	10.78	11.26	0.04
1977	66.7	66.4	0	12.01	12.18	0.01
1978	68.2	69.5	0.02	12.46	12.76	0.02
1979	98.8	104.1	0.05	19.75	22.04	0.12
1980	126.7	125	-0.01	28.7	29.79	0.04
1981	137.6	136.9	-0.01	34.46	34.33	0
1982	132.3	128.3	-0.03	31.45	32.07	0.02
1983	128.5	124.1	-0.03	28.88	28.85	0
1984	119.6	120.7	0.01	28.69	28.3	-0.01
1985	122.9	120.7	-0.02	26.5	26.86	0.01
1986	84.3	82.1	-0.03	11.93	13.3	0.11
1987	99.5	97.6	-0.02	19.36	18.02	-0.07
1988	98.7	94.9	-0.04	14.34	12.63	-0.12
1989	105.7	99.9	-0.05	17.23	18.39	0.07
1990	119	137.7	0.16	23.55	30.52	0.3
1991	114	113.4	-0.01	18.92	19.72	0.04
1992	115.8	115.9	0	19.56	18.66	-0.05
1993	109.7	111.3	0.01	15.83	14.51	-0.08
1994	118.2	116.3	-0.02	16.92	16.54	-0.02
1995	116.4	110.1	-0.05	16.75	16.62	-0.01
1996	124	125	0.01	20.54	22.87	0.11
1997	125.3	121.3	-0.03	18.19	18.52	0.02
1998	105.2	102.8	-0.02	11.77	11.56	-0.02
1999	125.5	126.4	0.01	19.57	23.12	0.18
2000	151	155.5	0.03	29.01	31	0.07
2001	142.7	126.3	-0.11	24.44	17.24	-0.29
2002	142.3	144.8	0.02	26.19	24.6	-0.06
2003	162.8	153.5	-0.06	29.15	28.28	-0.03
2004	189.8	201	0.06	40.3	41.77	0.04
2005	250.6	234.3	-0.07	59.3	52.13	-0.12
2006	298.5	224.1	-0.25	67.56	53.51	-0.21

References

Anderson, J. W. 2000. *The surge in oil prices: Anatomy of a non-crisis*. Washington, D.C.:Resources for the Future.

Borenstein, Severin, and Andrea Shepard. 1993. Dynamic pricing in retail gasoline markets. working paper NO. 4489.

Chester, Edward W. 1983. *United states oil policy and diplomacy A twentieth-century overview*. Contributions in economics and economic history. 52nd ed. Westport, Connecticut; London, England: Greenwood Press.

Chouinard, Hayley, and Jeffrey M. Perloff. 2002. *Gasoline price differences: Taxes, pollution regulations, mergers, market power, and market conditions*.

Dyson, Christopher P. 1992. *Fueling the public. an investigative report on the selling of gasoline.* Public Citizen, Inc., .

Engler, Robert. 1961. *The politics of oil: A study of private power and democratic directions*. Chicago 60637: The University of Chicago Press.

GAO (United States Government Accountability Office). 2005. *Motor fuels: Understanding the factors that influence the retail price of gasoline.* GAO-05-5255P.

GAO (United States Government Accountability Office). 1993. *Energy security and policy analysis of the pricing of crude oil and petroleum products.* GAO/RCED-93-17.

Glasner, David. 1985. *Politics, prices, and petroleum*. San Francisco, California: Pacific Institute for Public Policy Research.

Goel, Ran. 2004. A bargain born of a paradox: The oil industry's role in american domestic and foreign policy. *New Political Economy* 9, (4): 467-488.

Graham, Daniel J., and Stephen Glaister. 2002. The demand for automobile fuel. A survey of elasticities. *Journal of Transport Economics and Policy* 36, (1): 1-26.

Haller, Brandon H., and Helmut Norputh. 1994. Let the good times roll: The economic expectations of U.S. voters. *American Journal of Political Science* 38, (3): 625-650.

Ikenberry, John G. 1988. *Reasons of state: oil politics and the capacities of american government*. Ithaca, New York 14850: Cornell University Press.

Lewis-Beck, Michael S., and Richard Nadeau. 2001. National economic voting in U.S. presidential elections. *The Journal of Politics* 63, (1): 159-181.

Markus, Gregory B. 1992. The impact of personal and national economic conditions on presidential voting. *American Journal of Political Science* 36, (3): 829-834.

Masseron, Jean, ed. 1990. *Petroleum economics*. Trans. Nissim Marshall and Gillian Harvey-Bletsas. 4th ed. Paris, France: Institut Francais du Petrole Publications.

Norusis, Marija J. 2006. *SPSS 14.0 guide to data analysis.* Prentice Hall Inc.

Robinson, William S. 1950. Ecological Correlations and the Behavior of Individuals, *American Sociological Review* XV (Feb-Dec): 351-357.

Shields, Patricia M. 1998. Pragmatism as philosophy of science: A tool for public administration. *Research in Public Administration* 4, : 195-225.

Varian, Hal R. 1999. *Intermediate microeconomics. A modern approach*, ed. Ed Parsons. Fifth ed. New York, London: W. W. Norton & Company.

Wachs, Martin. 2003. A dozen reasons for raising gasoline taxes. Commentary prepared for public works management and policy.

Walstead, William B. 1997. The effect of economic knowledge on public opinion of economic issues. *Journal of Economic Education* 28, (3): 195-203.

Wheaton, William C. 1982. The long-run structure of transportation and gasoline demand. *The Bell Journal of Economics* 13, (2): 439-454.