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***Oil, Gas & Energy Quarterly* > *2014 Volume 62 Number 3* > *CHAPTER 1 POLITICAL COSTS AT THE PUMP: EARNINGS MANAGEMENT IN THE OIL INDUSTRY 2000–2009***

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**1.1 Scope**

Watts and Zimmerman (1978) introduced the concept of political costs to accounting literature. Broadly approached, the idea that firms might make decisions based on how they might appear to critical external constituents caused researchers to depart from narrow notions of economic rationality. Managers not only had to achieve successful economic results, but had to be concerned with how these economic results might be interpreted by regulators and the public at large.

The recognition that under certain conditions, companies could be harmed by appearing too successful, and therefore needed to actively manage their reputations and their visibility, has led to growing literature about political costs. This scholarship has deepened our appreciation for accounting choice and discretionary disclosure. The corporate persona, real or manufactured, lies at the heart of public policy efforts within a private sector economy.

The present research concerns itself with reactions by the major companies in the U.S. ***oil*** industry to the rising product prices of the first decade of the 21st century. Consistent with the notion that the worldwide search for and distribution of petroleum is *the* story of the last 150 years (Yergin 1992), the behavior of these firms is critically important to many markets, their customers and those that would regulate their outcomes. The results suggest an active process of earnings management to report less profits during a period of heightened corporate visibility, but only within one sector of the industry. Furthermore, some companies increased their efforts to manage their deferred taxes as part of this process. The paper makes a contribution to both our appreciation of political costs and our understanding of public policy pertaining to the ***oil*** industry.

The balance of the paper is organized into five sections. The first reviews the political costs literature with the purpose of supporting the testable hypotheses that are stated. The second describes the study’s methodology used to evaluate the hypotheses. The next two sections offer a summary of the main results and additional analyses, respectively. The final section provides a brief discussion of the results, including a consideration of their implications and their salient limitations.

**Literature review**

*The general nature of political costs*

The proposition that business organizations are autonomous actors in all important respects has been perpetrated by microeconomics. Organizations exist in environments that do more than set equilibrium prices and quantities. As suggested by organizational sociology, organizations must obtain and maintain legitimacy in order to continue in the good graces of society (see Meyer and Rowan 1977). Thus, legitimacy is a key strategic resource that furthers the success of the company over the longer term. As conceived by some scholars, this task creates some degree of isomorphism as companies respond to coercive, mimetic and normative environmental forces (DiMaggio and Powell 1983).

Accounting research has taken less ambitious theoretical templates to this basic organizational phenomenon. Conceding the potential impact of external parties on firm activities has been a first step in this direction (e.g., Beattie et al. 1994). Conceived as a constraint on what otherwise would be value-maximizing behavior (see Lee and Hsieh 1985), a variety of possibilities result. These include the incurrence of costs that would not otherwise exist and the foregoing of revenues that might be politically sensitive.

Watts and Zimmerman (1978) focused attention on reported accounting numbers because they shape the public’s impression of the company and can be used directly for regulatory purposes. The public has a love-hate relationship with successful companies, on the one hand admiring the goods and services that they bring to the marketplace, but on the other fearing that their dominant position can be abused. Those that possess regulatory responsibilities can be expected to disproportionately concern themselves with the larger and more profitable companies to either gain more credit for their efforts or to have a larger public interest impact by curbing the otherwise unfettered actions of major industry players. Both the general public and regulators might be activated by media groups who have a large enough interest to research accounting data, and who would naturally be drawn to more prominent targets.

The idea of political costs is sufficiently robust to suggest that firms behave in different ways at different times. Companies are not always in the spotlight that would heighten public or regulatory concern. The accounting choices made by firms might be different based on conditions that are thought to exacerbate or mitigate such oversight. Thus, wealth transfers initiated by external groups pose a temporally variable threat to company management. Accounting, in that, it possesses sufficient flexibility to produce varying consequences in different periods, would seem to be ideally suited as a focus of corporate response.

In sum, political costs present a countervailing dynamic to the predictable consequences of accounting information. Here, managers and shareholders have to be wary of exceptionally “good news” such as record profits and market share. In a longer time frame, such results might force governments to alter the rules of competition or the proper use of private property so that those positive outcomes are not sustainable.

*Earnings management*

The existence of political costs creates incentives for managers to disguise the true position of the company, usually making that position less favorable than it actually would be. These conditions bring the political costs literature in proximity to the earnings management literature which focuses upon the many reasons and methods whereby accounting choices can accomplish such strategic objectives. In fact, earnings management is one of the more popular topics in recent accounting literature, with studies conducted in many diverse areas. For example, Blankley et al. (2013) examined the relationship between pension costs and earnings management, Hughes et al. (2012) explored the relationship between earnings management and U.S. electric utilities’ rate regulation, and Perols and Lougee (2011) investigated the relationship between financial statement fraud and earnings management.

Several studies have developed earnings management approaches to the believed existence of political costs. Given the dependence of many contingencies and priorities, the manipulatability of accounting information raises serious concern for many interested groups (Healy and Wahlen 1999). For these purpose, a diverse set of approaches has been taken. Wilson and Shailer (2007) provide an in-depth study of one company for more than fifty years. They found profit smoothing with a variety of techniques motivated by the periodic needs to disguise high profitability and market dominance. A more quantitative and cross-sectional search for an accounting reaction to political costs was conducted by Beattie et al. (1994) with a specially designed smoothing index.

The most typical way that researchers have attempted to link political costs to income smoothing is through the operation of a specific accounting choice that has the desired income reducing effect. Wong (1998b), for example, showed how certain New Zealand companies avoided additional income tax scrutiny by electing a less visible offset option for export credits. Daley and Vigeland (1983) found that how research and development costs were accounted for varied with company’s relative use of public debt. Using a sample of Australian companies, Godfrey and Jones (1999) found a higher tendency to classify gains as extraordinary among more unionized firms. However, not all accounting choices are as strategically serviceable. Inventory valuation methods impose too many collateral difficulties to be the fulcrum to manipulate earnings even in the face of political cost motivations (Lee and Hsieh 1985).

Although income smoothing techniques should be thought of as the general response to political costs, they are certainly not alone as loci of corporate reaction to perceived vulnerability. Political costs also are believed to trigger exceptional tax paying postures. We ordinarily would assume that corporate taxpayers will attempt to minimize their tax liabilities. Albeit legal, such an approach renders corporations more visible and scapegoat-worthy, especially if done in conjunction with high financial accounting profitability. A rather indefensible tax position has been associated with the willingness of firms to disclose additional information (Deegan and Hallan 1991; Wong 1988a). Indeed, the presence of political costs causes a multi-faceted corporate response which highlights but is not limited to earnings manipulation (Pattern and Trompeter 2003; Trotman 1981).

*Industry effects*

Perhaps because different types of businesses present varying public interest issues, political costs cannot be easily separated from the industry level. Thus, broad-based cross-sectional data designs are not well-suited for these purposes (Beattie et al. 1994). If researchers attempt to go beyond single industries, they must design special measures that calibrate relative degrees of exposure to political threat (e.g., Cahan et al. 1997).

The industry serves as a convenient way to particularize the expected impact of political costs. Legislation is often targeted at businesses that involve themselves in some sort of specialized activity or generate particular byproducts. In part responsive to levels of industry concentration and the prospects for unsatisfactory market outcomes, government interference in rate setting and contracting variations presents distinctive political costs. Examples include the cable television industry (Key 1997), pharmaceuticals (Meyer et al. 2000) and property-liability insurers (Grace and Leverty 2010). Government is also known to be pushed into action against particular industry groups as a result of highly publicized environmental catastrophes, even if such triggering events occur outside the U.S. (Patten and Trompeter 2003) or are not attributable to corporate fault (Byard et al. 2007).

In some instances, the conventional boundaries of industries are not sufficiently precise to guide expectations about responses to political costs. Segments within an industry may face different types of exposure to external constituents. Such a division of an industry might carve out companies with more of a retail focus if harm to the public is at issue. Companies also vary in current practices and therefore new inflection points of regulation may create varying future compliance contingencies for some organizations, but not others. With diversified business lines, corporations also have different levels of exposure to any specific governmental initiative (see Key 1997).

*Measurement issues*

Perhaps the best evidence of corporate response to political costs is available from Wilson and Shailer (2007). These authors, by virtue of confining their focus to a single company, were able to develop convincing qualitative evidence that accounting is used strategically to reduce the incentives of regulators to fashion constraints on the company going forward.

Studies that pursue more generalizable information have had to accept less direct evidence. Often measurement follows the reasoning that political costs are differentially experienced by companies whose positions are *ex ante* more apparent to the external world. Historically, this makes a size operationalization a logical alternative. This idea was well articulated by Watts and Zimmerman (1986) who point out that larger firms will have more to lose, perhaps in the forms of political costs that come from extra taxes imposed above certain activity or size thresholds. That large companies behave differently from small companies has been a staple finding of other areas of the accounting literature (e.g., Zmijewski and Hagerman 1981) and therefore brings great familiarity to the measurement issue. However, this feature also may prove an embarrassment of riches. Lee and Hsieh (1985) argue that since size is not unique to political costs theory, its use may be spurious. ***Kern*** and Morris (1992) add that size is particularly ambiguous as it pertains to any hypothesis that involves tax consequences.

Watts and Zimmerman (1986) also suggest that high income made by corporations can create undesirable public attention. The existence of abnormal rates of profitability should not be itself a problem. However, closer scrutiny of the means by which such profits are obtained usually produces inconvenient information. Whereas, most accept that building market share is a legitimate corporate objective, steps taken to accomplish such can be reinterpreted as unfair to the competition (Wilson and Shailer 2007). With large profits also comes the expectation that proportional amounts of taxes should be paid (Wong 1988b). Perhaps attributable to the ambiguities of its measurement, profitability has not been routinely used as a metric whereby differential reactions to political costs might be predicted.

Measurement of political costs sensitivity might depend upon the monitoring interface that researchers contemplate. For example, the presence of an aggressive labor union capable of asserting “ability to pay” demands might call for the measurement of the extent of unionization across companies (e.g., Godfrey and Jones 1999). This approach could also call for comparisons across industries that would measure relative reliance on labor as a factor of production. A different tact should be taken if monitoring is projected from components of the capital markets. Here, Daley and Vigeland (1983) measured political costs based on the extensiveness of bond financing.

In extraordinary circumstances, the use of more diffuse forms of measurement might be appropriate. Concerned with the “game changing” approach of the environmental laws in the late 1970s, Cahan et al. (1997) combined seven specific measures of potential exposure into a composite index. During less extreme situations, in which politically charged conditions are seen as either temporary or reversible, less elaborate measures have been seen as acceptable.

When the political costs question is reconfigured as a longitudinal one, many measurement difficulties can be suppressed. Comparing company behavior at one point in time with behavior at another allows companies to serve as their own control groups. The many ways in which companies differ no longer have to be confronted. Cahan (1992) contributes an excellent example of such work, looking at federal antitrust enforcement against 48 companies over a 15 year period. Income reducing discretionary accruals were documented to be associated with years of more intense legal enforcement. The ability of companies to manage earnings in the face of political situations has not been attenuated by legislation (e.g., Sarbanes-Oxley) that was designed in part to strengthen accounting (Byard et al. 2007). However, longitudinal studies might have to contend with the influence of macroeconomic cycles as an alternative explanation of accounting choice (Makar and Alam 1998).

*The* ***oil*** *industry*

As a uniquely important part of the modern economy, the ***oil*** industry has not escaped the attention of researchers interested in political costs theory. The major ***oil*** companies are among the largest and most profitable entities in the private sector (CNNmoney.com 2012). Many of these companies have world-wide name recognition. All the conventional metrics suggest that they operate within the “glass fishbowl” of public criticism, and ever-changing regulatory thrusts. The U.S. tax code contains many provisions that tend to subsidize the production, refinement and distribution of petroleum products. Thus, the ***oil*** industry is one of high expectations, immense collateral consequences and large potential losses for those that demand and supply its products.

For the most part, political costs studies in the ***oil*** industry have been fashioned around particular events. Byard et al. (2007) studied the aftermath of hurricanes Katrina and Rita, notable here for their disruption of petroleum refinement activities. Large ***oil*** companies recorded abnormal income-decreasing accruals for the quarter immediately thereafter. Although the ***oil*** companies did not cause these weather conditions nor could they avoid production discontinuation, firms benefitted from the increased prices that followed this supply hiccup. Along similar lines, Han and Wang (1998) tested whether ***oil*** companies would attempt to manage their earnings following the advent of the first Gulf War in 1991. The much-anticipated invasion of Iraq also resulted in additional revenue for the ***oil*** companies. That study also demonstrated otherwise unexpected and short-lived earnings management.

The above studies suggest the ***oil*** companies do not enjoy the sudden attention brought to them by extraordinary events that disrupt their supply chain. Unlike most other industries for whom such events would be revenue reducing, adverse conditions put the ***oil*** companies in the difficult position of profiting from the bidding up of unit prices. This unique market property, caused by the inelasticity of demand and exacerbated by the increased pressure of worldwide technological development, can be characterized as classic political costs to which a predictable reaction has to be anticipated.

Mitra and Crumbley (2003) pose a broader and more ambitious question. They reasoned that the unique position of the ***oil*** companies in the economy should make them sensitive to their general level of profitability. They expected income reducing earnings management to be more common in years of greater levels of profit. However, these authors did not discover such a reaction for the years 1984 to 1996. Apparently, the idea of political costs is more particularized than the entirety of operational results in normal times can accommodate.

***Oil*** industry profits are much more complex than those of most other industries. Since its inception in the 19th century, the industry has been known for its boom and bust cycles, well illustrated by great discoveries and dry holes. Once the industry became closely associated with industrial progress and the trajectory of international competitiveness, tax policies became very important to industry success. On the one hand, generous deductions such as the depletion allowance had been designed to subsidize the discovery of natural resources. On the other, special taxes were designed to prevent the industry from becoming too profitable. Unit price increases, mostly caused by international cartels, create profits to which government has sought to lessen with specifically targeted “windfall profits” levies. To a large extent, how profitable the companies in this industry are is a product of government action or inaction. To say that ***oil*** industry profits reflect the perceived national priorities of the time period studied would not be too blatant an overstatement.

The primary point of visibility for the ***oil*** industry occurs at the gasoline pump. Even modest changes in gas prices are regular fodder for national network news coverage. With transportation in the U.S. so radically dependent upon the personally owned passenger automobile, very few people can afford to be indifferent about the cost of a gallon of gasoline. When more discretionary income must be devoted to the purchase of this product, the matter becomes one that various parts of the government feel pressure to ameliorate. It would appear that gas prices, more than industry profitability or short swing supply disruptions, possess the capability of becoming politically costly.

The cost of gasoline in the U.S. over the last few decades details the rationale for increasing societal concern. Following many years of unchanging low prices, the OPEC-induced restriction of supply in the mid-1970s escalated the price substantially. Shortages induced price gouging and rationing in some parts of the U.S. Dependencies on this critical commodity quickly became recognized. The 1980s and 1990s witnessed some upwards drift in the price, but at some points not even commensurate with the rise in the consumer price index. Prices escalated more rapidly in the late 1990s, a trend that plateaued in the early 2000s. This was followed by a final period of rapid rise in the later half of the 2000s. The last movement is blamed on instability in the Middle East, better cartel discipline, and a rise in worldwide demand, particularly China (Hakes et al. 2012). Each upward movement has been met by media coverage that featured how people would react, including efforts to conserve, changes in car-buying preferences, and movement closer to urban areas. Albeit less frequent, periods of falling prices saw media stories that featured the resurgence of past behaviors (large car purchases, long commutes willingly endured) or surprise over the persistence of less profligate energy consumption. Both trajectories of what has become a volatile priced commodity garner much attention.

*Hypotheses*

The unique importance of the ***oil*** industry to the U.S. economy allows us to study political costs in an unusually straightforward way. The consequences of changes to gas prices are well understood to consumers of all sorts from those who fabricate petroleum-based products to ordinary owners of automobiles. Unit price increases, determined mostly by international forces of supply and demand, immediately thrust the large companies of the ***oil*** industry into the limelight. That these companies are poised to reap large incremental profits on the backs of almost everyone else in the economy is a precarious position. Being able to mitigate the income consequences of escalating prices would be a sound strategic objective. Thus, earnings management in an income decreasing direction should be expected.

H1: Higher levels of income—decreasing earnings management exist during periods of increasing gas prices than in periods of non-increasing gas prices for companies in segments of the ***oil*** industry.

The study of earnings management has progressed from a generic utilitization of a large set of techniques and accruals to a more particularized investigation. For these purposes, the favored methods of earnings management could be expected to vary by industry. Different industries have different production functions, as well as different interfaces with suppliers and customers. That the accounting conventions reflect historical and normative understandings not only lead to variations in what is “generally acceptable” but also to numbers that are selectively “soft,” and therefore more susceptive to strategic manipulation.

Discussions of the ***oil*** industry invariably lead to conversations about their contributions to the public welfare. As discussed above, a vast number of special incentives have been created to encourage the growth and sustained profitability of this industry. Although less than reliable, political rhetoric of late has criticized the special tax advantages of the ***oil*** industry from both sides of the aisle. President Obama has directly called for the elimination of these tax breaks, perhaps sensing some degree of bipartisan support in commentary by Republican leadership that the ***oil*** industry ought to pay its fair share (Kirchgaessner and Politi 2011). However, the normative argument still ranges far afield from the outright fleecing of the American taxpayer through unnecessary tax giveaways (Kocieniewski 2010) to the need to sustain current levels of production and employment (PBS 2009). This debate over proper incentives is much easier for the industry to participate in when ***oil*** prices are not at or near historically high levels (Kirchgaessner and Politi 2011).

Accounting for income taxes presents companies with a high degree of complexity. Discrepancies between the U.S. tax code and U.S. GAAP consist of both permanent and timing differences for the same transactions. The large degree of discretion available to managers in their characterizations of transactions and their valuations makes the area ripe for earnings management (Gleason et al. 2010).

Tax-based earnings management in the ***oil*** industry combines the generic discretion available to all industries with those uniquely available to this type of industrial activity. With a global reach unsurpassed by any other sector, the ***oil*** industry has unequalled opportunity to relocate the incidence of profits and to judiciously manage foreign tax credits. Intercompany transactions also provide a means for income to move to lower-taxing jurisdictions. In larger part, the ***oil*** industry is *sui generis* vis-à-vis its interactions with the governments of the world (Coll 2012). This situation makes it virtually impossible to distinguish substance from form. For example, royalties paid to foreign governments may or may not be considered taxes for purposes of qualifying for offsets against U.S. tax liability (Kocieniewski 2010). The resolution of tax issues routinely involves billions of dollars, thus indicating the stakes involved in any management attempt to modulate this exposure.

The advantages of industry-specific tax provisions are obvious, responding directly to unique configurations of revenues or expenses. However, when such conditions no longer exist, the special tax treatments persist as unjustifiable loopholes. The ***oil*** industry continues to receive such benefits from legislation such as the Tariff Act of 1913. Under this legislation and other acts, the ***oil*** industry is able to claim deductions in excess of their investments (e.g. IRC Section 613), a privilege at odds with foundational concepts of capital recovery (see Murphy and Higgins 2013).

The size of the companies that constitute the ***oil*** industry, combined with the inherent volatility of that which it routinely does, makes for great and consequential uncertainty. The very prospect of extracting and transporting liquefied natural resources that cannot be initially seen involves large degrees of estimation and judgment under the best circumstances. When things go wrong, environmental problems tend to be enormous. As recently shown by the Deepwater Horizon ***oil*** spill, liabilities can be probable but difficult to quantify in advance. Creating reserves for such events would seem to be prudent and reasonable. The tax consequences of such planning would seem to offer ample earnings management opportunity.

Income tax based earnings management could be observed either as rate effects or as base effects. The former implies that those concerned about whether companies are paying a “fair share” will observe the effective rate of income taxation. Rate management takes into its purview both the taxability of inflows and the magnitude of allowable deductions. Base effects suggests that companies have higher levels of discretion over their expenses. Expenses taken in one period are generally unavailable for other periods, and represent less broadly-based tax management than the examination of rates. In either location, the main point is that the discrepancy between income taxes expense and income taxes paid (i.e., deferred tax liabilities) should be a fertile earnings management setting. Since some interests exist in both ways of approaching tax management, two sub-hypothesis are stated.

H2a: Income tax rates paid by companies in the segments of the ***oil*** industry in periods of increasing gas prices will be higher than in periods of non-increasing gas prices.

H2b: Income tax expenses claimed by companies in the segments of the ***oil*** industry in periods of increasing prices will be higher than in periods of non-increasing prices.

**Research Methods**

*Firms*

For purposes of convenience, this paper has addressed “the ***oil*** industry” as if it comprised one set of undifferentiated organizations. However, segments of the industry exist due to their specialization in particular parts of the supply chain. This includes companies that provide exploration services, field services, drilling, crude ***oil*** distribution, and petroleum refinement. Their distinction is evidenced by the several separate SICs needed to cover the companies engaged in these activities.

Whether or not industry segments should be separated in the data analysis presents an empirical question. Initially, Compustat data was gathered on all firms with SICs of 1382, 1389, 1381, 1311, and 2911 (representing the five types of companies listed above) from the 2011 annual industrial database. This included companies with December 31 fiscal year ends. This procedure netted 17,354 firm quarter observations which consisted of 1,087 petroleum refining firm quarter observations (SIC 2911), 12,974 crude petroleum and natural gas firm observations (SIC 1311), and 3,293 other ***oil*** and gas industry firm quarter observations (SIC 1381, 1382, and 1389). Because several of the SICs were not well populated, they were collapsed into a miscellaneous set of firms. Table 1 documents the sample selection procedure. Consistent with prior literature, the extreme values of the distribution were winsorized at the 1st and 99th percentiles in order to mitigate the influence of outliers.

*Design*

Gas prices have become much more volatile after the turn of the 21st century. Whereas up and down movement on a regular basis has been observed for several decades, the two halves of the last decade exist in considerable counter distinction. The five year 2005–2009 period was marked by gas (in all grades) that cost 73% more than in the previous five year period (2000–2004). The difference in mean weekly prices during the early period ($1.49) was statistically different (t = 5.71, p < .01) than the mean weekly prices of the second period ($2.61). Figure 1 depicts the gas prices of these periods.

Predictably, ***oil*** company revenues reached new peaks in the years of increasing gas prices. Figure 2 shows the percent change in revenues for the three segments of the ***oil*** industry, above the base year defined as 2000. Revenue change was not impressive during the 2000–2004 period, averaging approximately 20% across the segments. Only in the last year (2004), as we transition into the gas increase years did substantial revenue change occur. On the other hand, the average percent change of the years 2005–2009 was approximately 50% over 2000. This difference helps validate the distinction drawn between the years.

Figure 2 also shows that industry segments did not experience revenue changes at the same time or with the same degree. Refiners (SIC 2911) and crude ***oil*** producers (SIC 1311) have less dramatic increases than the aggregate of miscellaneous types of firms and such increases do not start until much later in the latter period. Whereas all segments seemed to have benefitted from high gas prices, the absence of uniformity adds to the problematic nature of a singular “***oil*** industry” for present purposes.

*Model specification*

In general, existing literature assumes that higher discretionary accruals imply higher levels of earnings management (Healy and Wahlen 1999; Fields et al. 2001). Following Dechow, Sloan, and Sweeney (1995), the modified Jones method serves as a conceptual starting point to measure discretionary accruals as the residuals from the following model:

ACCit is the total accruals for firm i in quarter t (earnings minus cash flows). ΔREVit is the change in Revenues. ΔRECit is the change in Receivables. PPEit is gross Property Plant and Equipment at the end of quarter t. These variables are deflated by lagged assets (TAi,t-1)

However, the measure of earnings management (EM) is uninformative as to whether firms manage earnings downward (using negative/income-decreasing discretionary accruals) or manage earnings upward (using positive/income-increasing discretionary accruals). Since Hypothesis 1 relates to whether ***oil*** industry firms manage earnings downward during the price spike period, we use directional earnings management (D\_EM).

After obtaining our quarterly measures for earnings management, we empirically test the hypothesis that the sample ***oil*** firms recorded relatively higher levels of abnormal earnings-management in the increasing gas price period covering 2005 through 2009 than the other period covering 2000 through 2004 with the following model:

EM indicates one of two earnings management measures: (1) EMit is the absolute value of the firm-specific discretionary accrual in quarter t; (2) D\_EMit is the firm-specific discretionary accrual in quarter t when that measure is greater than zero and zero otherwise. SPIKE\_Dt is an indicator variable equal to 1 if the year is 2005 or later and 0 otherwise. OCFit is the operating cash flows. ROAit is the return on assets calculated as operating income divided by total assets. ASSTGRit is the growth in total assets calculated as the change in assets divided by lagged assets. MBit is the Market-to-Book ratio at the end of quarter t. LEVERAGEit is the firm’s liabilities divided by the firm’s assets at the end of quarter t. QTR\_D(n)it is an indicator variable equaling 1 if the fiscal quarter is (n) and zero otherwise where n is equal to 1, 2 or 3; SOXt is an indicator variable which is equal to 1 if the year is either 2003 or 2004 and zero otherwise. R\_GDPt is the percent change in the real gross domestic product from the previous quarter. The use of these variables follows Cohen et al. (2008).

Income taxes for a manufacturer are usually a function of revenues, cost of goods sold, depreciation, and interest expense. Accordingly, we estimate the following equation for the H2a and H2b tax incentive variables:

Tax Effect is measured with the tax related variables found in the literature. *First*, we consider the firm-specific growth in income tax expenses, ΔTAX which is measured as the current quarter income tax expenses minus the income tax expenses of the corresponding quarter from the previous year. *Second*, following Dhaliwal et al. (2004), we examine the effective tax rate (ETR). ETR is the current quarter income tax expenses divided by the accumulated year to date pretax income. ΔREV is the changes in revenues measured as the current quarter revenues minus the revenues of the corresponding quarter from the previous year. ΔDEPR is the changes in depreciation expenses measured as the current quarter depreciation minus the depreciation of the corresponding quarter from the previous year. ΔCOG is the changes in cost of goods sold measured as the current quarter cost of goods sold minus the cost of goods sold of the corresponding quarter from the previous year. ΔSTDEBT is the changes in short-term debt measured as the current quarter short-term debt minus the short-term debt of the corresponding quarter from the previous year. ΔLTDEBT is changes in long-term debt measured as current quarter long-term debt minus the long-term debt of the corresponding quarter from the previous year. The remaining variables in Equation (3) are defined consistently with Equation 2 (see above).

**Results**

*Descriptive analyses*

Table 2 reports descriptive statistics for our three sets of sample firms for the sample period 2000 to 2009. Consistent with prior literature (e.g., Byard et al. 2007) the petroleum refining sample shows dollar amounts are much larger than the other two samples with total mean (median) market values of $8.6 billion ($7.5 billion) compared to $1.1 billion ($1.0 billion) for the crude ***oil*** firms and $2.3 billion ($1.9 billion) for the other firms. Also comparable with existing literature, total accruals are approximately 10 percent of lagged total assets for all three industry segments (see Cohen et al. 2008, Holder, et al. 2013).

Table 2 also provides information of difference in accounting reactions within the ***oil*** industry segments. The petroleum refining firms have noticeably smaller earnings management measures than the two other groups. This is true in terms of magnitude, where the average non-directional earnings management measure for the petroleum refining sample is .07 compared to .21 for the crude ***oil*** and gas firms and .23 for all other ***oil*** and gas firms. With regards to volatility, the standard deviation for the non-directional earnings management measure is .08 for the refiners. This compares distinctly with .25 for the crude ***oil*** and gas firms and .42 for all other ***oil*** and gas firms. These results suggest that the petroleum-refining firms exercise considerably less earnings management than the other two industry segments.

The three tax incentive variables presented highlight the widespread accounting conservatism in these industry segments. In general, income taxes for all three ***oil*** and gas industry samples have risen by approximately 50 percent during the 2000 to 2009 period. The tax variables do not attest to aggressive tax positioning in any of the three sectors. Deferred tax liabilities have not grown proportionate to tax payments. Effective tax rates are relatively higher than reported by previous studies (e.g., Cook et al. 2008) with means ranging from 18% to 23%.

*Univariate Analyses*

Table 3 provides separate correlations of the variables in the analysis. A significant positive correlation exists between the earnings management variable (EM) and the tax growth variable (?TAX) for the petroleum refining firms during the stable price period is shown in Panel A. The converse of this result, a significant negative correlation between these variables, is produced during the increasing price period as shown in Panel B. This result suggests that during the stable gas price period, income tax expenses increased with the overall level of earnings management for these firms. However, the opposite phenomenon exists during the gas price spike period.

*Multivariate Analyses*

As a preliminary step, Equation 2 examines all differences in the absolute level of earnings management between the gas price increase and non-increase periods. The results of this ordinary regression estimation are shown in Table 4. A positive coefficient on the time period variable (SPIKE\_D) would be indicative of more earnings management in the price increase period. Surprisingly, these results suggest that all three ***oil*** and gas samples managed earnings noticeably less during the price increase period of 2005 to 2009. The time period variable is significant and negative (p < 0.01, two-tailed) in the regressions pertaining to each segment. However, this result is uninformative without an investigation of whether ***oil*** and gas firms engaged in income-increasing and income-decreasing earnings management during the two periods.

Table 5 presents the results of OLS regressions with directional earnings management as the dependent variable. Similar to Table 4, the variable of interest is the time period indicator variable (SPIKE\_D). A positive (negative) coefficient would indicate that there is more (less) *income increasing* earnings management during the spike period. Consistent with our political cost hypothesis, petroleum refining firms and the other ***oil*** and gas firms appear to have committed significantly less income-increasing earnings management during the second period. The time period variable is significant (p < 0.01, two-tailed) and negative for these firm types. Interestingly, the crude ***oil*** and gas firms seem to have committed noticeably *more* income-increasing earnings management during the gas price increase period (t=10.07, p < 0.01, two-tailed). Hypothesis 1 is partially supported.

Table 6 presents the results of OLS regressions with the change in income tax expenses dependent variable, as called for by Hypothesis 2b. A positive (negative) coefficient would indicate increases (decreases) in income tax expenses during the price spike period. A significant and negative coefficient on the time period variable (SPIKE\_D) for the crude ***oil*** and gas firms (t= -6.63, p < 0.01, two-tailed) suggests that the firms in this industry segment use the income tax expense account to negatively manage earnings. The insignificant coefficient on the time period variable for the other segments suggests that the petroleum refining firms and the other ***oil*** and gas firms are not using the income tax expenses to such an extent to manage earnings. Again, mixed support varying by industry sector is found for Hypothesis 2b.

Table 7 presents the results of the OLS regressions using Equation 3. As required by Hypothesis 2a, the change in effective income tax (ETR) is the dependent variable. A positive (negative) coefficient would indicate higher (lower) effective tax rates during the price spike period. After controlling for other determinants of the effective tax rate, we observe that the crude ***oil*** segment had a higher effective tax rate during the spike period (t=-3.68, p < 0.01, two-tailed). The other two samples show insignificant tax rate changes during the spike period. Hypothesis 2a is supported as it pertains to the crude ***oil*** and gas segment, but not supported for the two other segments.

In general, as suggested by political costs theory, the petroleum refining firms appear to be managing earnings downward in order to minimize their reported earnings numbers. However, these firms appear to be using methods other than those related to their tax liabilities. At the same time, the crude ***oil*** and gas firms appear to be actively engaged in managing their tax rates and expenses during high retail gas periods.

*Additional analysis*

We considered three other alternative earnings management model specifications which control for performance (Kothari et al. 2005) and leadership (Kaznik 1999) and growth (McNichols 2002). These variations have emerged in the literature as major alternatives to the modified Jones measure. The results using these other measures are quantitatively similar to the reported results, and would not have supported alternative conclusions about the political costs of any of the industry segments over the two time periods.

The paper’s characterization of 2005–2009 as a period of price increases for gas at the pump is true in the aggregate, and in contrast to the 2000–2004 period. However, as shown by Figure 1, gas prices declined in 2009 from their 2008 peak. Because no mathematical necessity exists in having an equal number of years in the non-increasing and increasing periods, 2009 was excluded from the latter. No substantive change was produced as a result of the alternative temporal specification of a four-year gas price increase period.

Accruals basically represent non-cash revenues or expenses that will be realized in the future. The quality of the estimation can be undermined by either unavoidable miscalculations (when the future is uncertain, hence predictions are not very precise) or willful misrepresentation of earnings (when managers choose to intentionally manipulate accruals, resulting in earnings management). The latter has come to be known as poor earnings quality and is associated with many undesirable outcomes such as SEC enforcement actions (Dechow, Sloan, and Sweeney 1996), lawsuits (Francis, Philbrick, and Schipper 1994), a higher cost of both debt and equity capital (Francis, LaFond, Olsson, and Schipper 2004, 2005), and poor future returns (Chan, Chan, Jegadeesh, and Lakonishok 2006).

Assuming a random distribution of unintentional errors, any decreases in overall accrual quality can be attributed to voluntary management decisions. Thus the heightening of political costs during the gas price increase period should be associated with a decrease in the accrual quality of earnings for the ***oil*** and gas industry firms during those years. A test for differences in the information content of earnings between the two gas price periods, using a model detailed in the Appendix, provides an opportunity to test the robustness of the empirical models used to test the hypotheses.

Table 8 presents the results of the tests using the accrual quality measures as the dependent variable. The results suggest an overall decrease in the accrual quality for all three segments of the ***oil*** and gas industry. A positive and significant (p < 0.01, two-tailed) standard deviation of residuals during the escalating gas price period exists for the three industry groups.

**Conclusion**

Perhaps no industry has received as much political scrutiny as the ***oil*** and gas industry over the past few years. The current study extends earlier political costs research by examining U.S.-based ***oil*** firms’ tax incentives and earnings management behavior during two periods of contrasting gas price trajectory. Prior research has focused almost exclusively on understanding whether attempts to control political costs occurred around specific events (Han and Wang 1998; Byard et al. 2007). In contrast to this methodology, this research compares a relatively long event period of time with another lengthy period. While such an attempt did not reveal political costs reactions in Mitra and Crumbley (2003), this study chose a potentially more relevant triggering condition: relatively stable prices with a similar period of unusually high and increasing prices.

The results document an overall decline in the level of earnings management for all three industry segments studied during the price spike period. However, conditioning on the direction of earnings reveals a significant increase in income-decreasing earnings management in the gas price spike period for firms in the petroleum refining segment of the industry. This result indicates the need not only to consider the goal of earnings management, but also to consider a population of firms more specific than entire industries. Political costs inherently imply a strategic objective that necessitates a particular directionality of results. That some firms in an industry may have different exposures and sensitivities to public attention seems quite plausible.

In addition, this paper explored the specific means of earnings management that might have been used by ***oil*** and gas firms. The highly specialized and very generous treatment of these economic activities in the federal income tax code made tax methods particularly interesting. The results document that the crude ***oil*** and natural gas producers tend to have higher effective tax rates during periods when retail gas prices are higher. This industry segment also has elevated income tax expenses during such times. Together, these results suggest an active attempt to construct a certain posture regarding tax liabilities that was not true in the period marked by more stable and lower retail gas prices. That similar evidence of an association between either income tax expenses or effective tax rates and the time period (as demarked by gas prices) for the other two industry segments again suggests that political costs are not common to all firms in an industry.

This study provides several insights for standard setters and policy makers. Since the results suggest that ***oil*** company managers routinely manage earnings, the financial data being used in regulatory discussions may need to be modified to eliminate the effects of such earnings management. Second, if earnings in general and tax accounts in specific are being managed, such management behavior could result in a distrust of such managers which could significantly hamper their right to dominate the development of proper public policies relevant to these activities. The size and importance of firms in this industry establishes a link to possible antitrust questions. Here, judgments about the future degrees of competition in the industry are heavily dependent upon relative degrees of past and present results, so a better understanding of earnings would be quite helpful. The findings on earnings management by ***oil*** and gas firms might part provide useful information for shareholders. Whereas, investors cannot rely so much on the literal truth of accounting information, they should be pleased that managers are considering the long term implications of their reporting decisions and the possible threats in their business environment. Perhaps most importantly, this paper stands for the notion that public policy implications must be made at the level of the industry segment.

This study suffers from a number of limitations. To measure earnings management, directional earnings management and accrual quality the consensus accepted measures were used. Although, we also consider a number of alternatives as robustness checks, our results should still be considered sensitive to the ability of accepted measures to capture the true underlying activities. As noted by Dechow et al. (2010) correlated omitted variables associated with fundamentals are always an issue. Because normal accruals depend on these fundamentals, inherent endogeneity between the hypothesized determinants and the fundamentals continues to present a potential problem. Thus, results should be interpreted with caution.

Future research on this important industry should make an attempt to explicitly examine the several questions opened by this paper. The following are among the more obvious candidates. Which accounting standards are used to manage earnings by the ***oil*** and gas firms? What is the frequency of ***oil*** and gas firm managers’ use of reporting judgment to manage earnings rather than to communicate firm performance to investors? What factors limit earnings management by managers in ***oil*** and gas firms? Are managers in ***oil*** and gas firms with effective corporate governance or disclosure policies less likely to engage in earnings management?

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**End of Document**

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