

AN EMPIRICAL EXAMINATION OF INCOME SMOOTHING INTENTIONS IN EXTRACTIVE INDUSTRY FIRMS

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This study explores whether respondent firms to the IASC's extractive industries issues paper (issued for comment in November 2000) possess characteristics likely to induce managerial intent to smooth income and if these possibly influenced the pattern of their responses. Buckmaster (2001, 12) includes under the "regulatory smoothing" heading of taxonomy of smoothing tactics "any literature applicable to income smoothing and accounting regulation whether it be lobbying effort, recognition of lobbying effort, provisions in regulations that were written in order to reduce income volatility, or prohibitions of smoothing tactics." The present study relates to this classification. A revisit of the role of lobbying in the standard-setting process is of relevance in the on-going efforts aimed at producing a substantive accounting standard for the extractive industries and the global harmonization of accounting standards.

This study seeks to establish whether comment letters have information content that will provide unique exposition of managerial intent to smooth income or to maintain income-smoothing leeway. For this purpose, it is significant to note that arguments for and against the full cost (FC) and successful efforts (SE) methods of accounting for exploration and evaluation (E&E) expenditures in the issues paper center on the methods' income smoothing characteristics (see IASC, 2000, sections 4.18-4.35 and 4.45-4.55). The responses of commentators to the issues paper should reflect their alignment or disagreement with these views against the backdrop of their own income management practices. Specifically, the following questions are of relevance in this deliberation:

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1. Does the available evidence suggest that the lobbying efforts of respondents were relatively more intense on matters of historical cost method choice, method of depreciation of E&E assets, and impairment test requirements?
2. Can intense lobbying positions, wherever observed in respect of the issues paper, be explained by the characteristics (using underlying financial statements and accounting number proxies) of “lobbying” entities?
3. Corollary to (2) above, what insight does the relationship between lobbying intensity and the issues lobbied against provide about the income smoothing intentions of managers, given that the issues considered have implications for the ability to influence the reporting of earnings’ magnitude and timing in the financial statements?

A measure (see Asekomeh *et al.*, 2006) for intensity of lobbying of issues believed to have income smoothing possibilities proxies for smoothing intention. There appears to be significant dependence between this measure and the existence of both high debt-equity ratios and ownership change activities among respondent firms. Since prior literature (see Deakin, 1979; Collins *et al.*, 1980 and DeAngelo, 1986 and 1988) hypothesizes that these characteristics are suggestive of specific contexts likely to induce management intent to smooth income, the results may be indicative of intent to smooth income or prevent forfeiture of income management strategies.

The structure of this paper is as follows. The next section synthesizes the literature for theoretical/empirical research scope, bringing together literature on income smoothing and the oil and gas industry accounting standard’s conundrum.¹ This is done in the context of the support of the use of comment letters as a lobbying tool by extractive industry firms (Asekomeh *et al.*, 2006) and regulatory smoothing (Buckmaster, 2001). A subsequent section outlines the study’s initial postulations and methods used to test characteristics of responding firms against their observed lobbying pattern. The penultimate section presents and discusses the results of the analysis. A discussion of findings and their implications concludes the paper in the final section.

¹ The controversy principally relates to issues of accounting method choice and discretionary accounting decisions that have income smoothing potentials.

Literature Review

Examinations of the incentives and methods for minimizing “abnormal” periodic variations in earnings pervade the extant literature. Most studies conjecture that financial markets and investors place a high premium on smooth (stable) high quality earnings figures (see Bao and Bao, 2004). This attribute is believed to provide sufficient incentive for companies to engage in income smoothing, especially where managers are appraised or rewarded based on market performance (see Healy, 1985 and Guidry *et al.*, 1999).

Most studies seek evidence for income smoothing by modelling the effect of managerial discretion on earnings² (Healy and Wahlen, 1999). A major model specification issue is determining how the affected accounting numbers behave in the absence of earnings management (Schipper, 1989). In other words, what is the “normal” or target level of income around which minimal deviations is desirable? Given that generally accepted accounting practice (GAAP) is not overly prescriptive³ in the interpretation and application of accounting principles, a definitive segregation of discretionary and nondiscretionary accounting measures is difficult to accomplish (McNichols, 2000).

Thus, the research problem essentially relates to identifying management’s or financial statements preparers’ *a priori* intentions regarding their earnings stream, as determined by their interpretation of GAAP or accounting standards. Dechow and Skinner (2000) observe that managerial intent for income smoothing is often a conjectural matter in prior research. Writers assume actual intent exists in specific contexts. For example, when management compensation is based on earnings performance, the argument is that managers would opportunistically smooth income to increase their reward. McNichols (2000, 337) notes that “the objective of the research focuses on understanding whether earnings are being managed in a given context, how they are managed and the incentives that shape the environment for discretionary behavior.”

² Managerial discretion is exercised over a set of accounting numbers or choice of reporting methods or variables in the implementation of the accrual concept. A popular test for income smoothing is the separation of discretionary and non-discretionary accruals, where discretionary accruals serve as a proxy measure for income smoothing effort.

³ It is debatable whether accounting regulation should be prescriptive. Opponents contend that resorting to rules-based accounting standards make them unwieldy and prone to interpretation problems (Schipper, 2003).

However, the presence of the context is only indicative of the likelihood of inducement of intent to smooth income. In the absence of clear statements of management intent, the attempt to distinguish smoothers from non-smoothers based on that specific context alone could be misleading.

Actual managerial intent or the characteristics driving that intent, if known, would provide a better basis for selecting partitioning variables or parameters in income smoothing detection models.⁴ These models can only explain part of the effect of discretionary accruals in income smoothing. Where the method of reporting accounting numbers differs across entities or where disagreements exist as to their nature, the task is even more complicated. Hence, the development of the income-smoothing hypothesis would continue to profit from clarifications made available by preparers—via comment letters or such means—which provide insights into preparers’ implied relationships amongst smoothing variables or objects.

The notion of managerial intent to smooth income implicitly assumes that managers believe “some users of accounting information must be either unable or unwilling to unravel completely the effects of earnings management” (Fields *et al.*, 2001, 260).⁵ The actual objectives necessitating the pursuit of that intent may or may not conform to what contractual terms or management utility considerations may lead researchers to expect. Thus, managerial intent may be consistent with a positive accounting theory of rationality (Beattie *et al.*, 1994 and Watts and Zimmerman, 1978 and 1990), wherein managers seek to maximize their own utility, or it may relate solely to the desire for a fair representation of the firm’s results via signalling (Trueman and Titman, 1988).

⁴ Most prior accrual models used for this purpose are based on the Jones model (Jones, 1991) and the revised Jones model (Dechow *et al.*, 1995).

⁵ Inability to identify the distortions to earnings streams arising from earnings management may imply a negative effect on relevance of accounting information (Marquardt and Wiedman, 2004) while an unwillingness to do so may imply income smoothing is a useful signalling tool (Trueman and Titman, 1988).

Hypothesis Development and Empirical Design

From an extractive industry perspective, there can be discretion regarding the extent and timing of the recovery⁶ of accrued E&E expenditure, which may alter the magnitude of reported current/future period earnings. The issues paper recognizes that the FC and SE methods directly or indirectly influence the level of reported earnings in relation to the IASC Framework (1989) on the treatment of accruals (IASC, 2000, paragraph 4.26). SE proponents contend that its treatment of E&E expenditure reflects the volatility that is inherent in exploring for mineral reserves in a way not possible if (as done by the FC method) all preproduction expenditure were to be capitalized:

...the capitalisation of unsuccessful exploratory efforts and their subsequent depreciation as unrelated reserves are produced would result in income smoothing that hides that volatility...Income smoothing results in the reporting of an artificial income both when the costs are deferred and throughout the periods of depreciation (ibid, paragraph 4.27).

...If costs of unsuccessful exploration and development activities are capitalised rather than expensed, and carried forward and combined with costs incurred in prior years and with costs of the current year's successful activities, the efficiency and effectiveness of management is not evaluated in the income statement because of the income smoothing that results. (ibid, paragraph 4.30).

On the other hand, FC adopters argue that SE provides a means of managing earnings through the timing of preproduction expenditures for discretionary period costs:

A reduction in exploration expense resulting from the curtailment of exploration would likely increase reported net profit in the years in which the exploration is cut back, even though because of the cutback few or no new reserves are added.⁷ (ibid, paragraph 4.31).⁷

⁶ This is usually through amortization and/or expensing of impairments against reserves. The dialectics of the issues paper's ensuing debate, which mirror those of a similar attempt in the 1970s by the Financial Accounting Standards Board (FASB), center on the appropriateness of the disparate methods for estimating the expenditures.

⁷ An increase in exploration expense should have the converse effect of decreasing reported net profits with or without proportionate reserves growth.

The implication of these assertions is that income smoothing is possible by adjusting the impact on earnings of accruals through the expense/capitalize and amortize decision. The same possibility exists through real expenditures timing (see Roychowdhury (2006) for a review of this latter approach to earnings management), where the timing of E&E activities and costs produces a smoothing effect on earnings.

The review questions set out in the introduction relate specifically to the way respondents reacted to the above assertions. Combining the review questions and the assertions of the issues paper, the following testable hypotheses (stated in alternate form) can be set up:

H1_A. *Lobbying effort, measured as divergence of views from standard setter's position, would be more intense for issues suspected to confer or limit income-smoothing leeway.*

H2_A. *The observed lobbying pattern would highlight or correspond with the existence of characteristics that are indicative of contexts that would induce income-smoothing intent in management.*

Asekomeh et al. (2006) addresses H1_A relating to question one via a "meaning-oriented" content analysis of the comment letters to the issues paper, culminating in their development of a lobbying intensity measure. Table 1 reproduces the most intensely lobbied issues and the measure of lobbying intensity reported in Asekomeh *et al.*, (2006) approach. Lobbying intensity is a binary variable with value "1" (objection to the proposal) or "0" (support for the proposals). Sixty-one percent (i.e., 14 out 23) of the respondent firms objected to the issues considered to have a scope for income smoothing.

Table 1
Descriptive Statistics for a Combined Measure of Lobbying Intensity

No.	Issues Paper question/subject	Responses from firms (N=23)			Normalized* (N=n=23)		
		n	Mean	SD	N	Mean	SD
6.4	Post-acquisition geological and geophysical (G&G) exploration costs	21	0.71	0.46	23	0.65	0.49
6.5	Post-acquisition drilling, trenching, and sampling exploration costs	21	0.62	0.50	23	0.57	0.51
6.6	Post-acquisition evaluation or appraisal costs	21	0.57	0.51	23	0.52	0.51
6.7	Time limit on deferrals	17	0.41	0.51	23	0.30	0.47
6.11	Capitalization of borrowing costs	21	0.38	0.50	23	0.35	0.49
7.1.2	Method of depreciation of assets that serve or are capable of serving multiple cost centers	18	0.56	0.51	23	0.43	0.51
8.2	Provision arising when asset is installed	20	0.40	0.50	23	0.35	0.49
8.7	Treatment of the effect of a change in a provision	20	0.75	0.44	23	0.65	0.49
9.5	Impairment of deferred preproduction costs not attributed to CGU	19	0.63	0.50	23	0.52	0.51
L	Lobbying intensity				23	0.61	0.50

Notes

* The left hand block replicates the statistics presented for each item for which respondents had significant disagreement with the Steering Committee's tentative view. The normalization process treated missing responses to particular issues as if the respondent supported the standard setter's position**. The revised coding (including all 23 firms) is used for determining average measure of lobbying intensity, which is taken to be an objection (L=1) if a firm objected to at least five of the above nine issues. Thus, 61% of firms lobbied intensely against the issues.

** Missing responses received the same code as support for Steering Committee's tentative positions. However, this may not necessarily be the case as some respondents addressed only the issues they considered fundamental to an accounting standard in the extractive industries. Their opinion about other issues can only be determined after the fundamental issues have been resolved. Nevertheless, treating "silence" as "consent" does not alter the reference category, which in this case is the group of "dissenting" respondents.(Reproduced with additional/clarifying comments from Asekomeh *et al.*, 2006, 72)

This study reviews the observed distribution of lobbying intensity, which could proxy for income smoothing intentions, to assess if firm characteristics, represented by appropriate financial statement proxies, could reasonably predict response patterns (questions two and three) by means of H2_A.

From the antecedent review and with recourse to prior literature on income smoothing and historical cost method, a set of measures for specific contexts likely to induce management intent to smooth income (MISI) can be compiled. Notably, discriminating characteristics between FC and SE firms include size/age of firm, exploration aggressiveness, and extent of dependence on external funds (Deakin, 1979, 726; Collins *et al.*, 1980). In addition, debt covenants (also a measure of dependence on external funds as above), accounting performance-based reward schemes, change in accounting policies and recent change in ownership composition or related activities have been investigated as creating income smoothing propensity (see Buckmaster [2001] and Ronen and Sadan [1981] for major reviews of income smoothing contexts and objects).

From the above features, a construct for MISI – the set of characteristics likely to create management intent to smooth income – would be:

$$MISI = \{ Bonus, R_{D/E}, Size, \Delta Acct, \Delta Own, Expl, \dots \}$$

The terms in equation 1, what they represent, the accounting proxies used to derive them, and the convention for coding them in this study are set out below:

MISI	A set of measures for specific contexts likely to induce management intent to smooth income. The elements of this set include, but may not be limited to, the under-listed items;
Bonus	Signifier of management bonus scheme attached to an accounting number or earnings and other accounting performance. This variable is coded “1” where such a scheme exists and “0” otherwise;
R _{D/E}	Debt/equity (D/E) ratio of firm or existence of a debt covenant with providers of debt finance. This variable is coded as “1” when D/E is greater than 50% (i.e., where debt finance is more than half of shareholders’ equity) or where a debt covenant exists and “0” otherwise;

Size	Relative size of oil and gas firm judged by the revenue/turnover and or total assets for the relevant accounting year. A respondent firm is classified as big (coded "1") where total assets exceed \$5 billion (US Dollars) and as small or medium-scaled (coded as "0") otherwise;
Acct	Significant accounting policy change. This is coded as "1" where there has been a change in any accounting policy within the relevant year and "0" otherwise;
Own	Recent change in ownership structure or indication of such a prospect. This could be by means of an initial public offer (IPO), a management buyout (MBO) or a proxy context. The variable is coded "1" for firms with any of these events within the relevant accounting year and "0" otherwise; and
Expl	Exploration aggressiveness is measured as year-on increases in exploration expenditure (coded "1" for such an increase or "0" otherwise). The variable Expl measures the timing of E&E expenditures since the review also shows it is possible to manage earnings by the timing of expenditure (i.e., real smoothing).

The variables, coded as above using financial reports of the 23 responding firms for the period 1999–2000,⁸ are as shown in Table 2(a). The characteristics variables are also dichotomous;⁹ hence, the reported means (averages) represent the number of firms that exhibit the attribute described by each variable. Thus, Table 2(a) shows that of the 23 responding firms, 43% (10) had a bonus scheme related to performance, for instance; 26% (6) had a debt/equity ratio of at least 50%; etc. These statistics are with respect to the 2000 financial year. The exploration aggressiveness variable was measured as year-on exploration expenditure changes from 1999 to 2000. The correlation matrix [Table 2(b)] shows that there is no significant correlation between the variables.

⁸ This is the period preceding or covering the publication of the issues paper. It is possible that firms could start making provisions for eventual adoption of the proposals, hence the choice of accounting year. This period's financial statements are more likely to reveal existing income smoothing options as at that time. Financial data were obtained from public domain sources (e.g., company websites, filings to the stock exchange or regulatory bodies, etc).

⁹ Questions about such categorical data design for both the lobbying intensity measure and the characteristics variables are addressed (and justifications for the coding scheme adopted are presented) in the discussion of results below.

Table 2(a)
Descriptive Statistics of Firm Characteristics Variables

Variable descriptor	Symbol	n	Mean	SD
Bonus/incentive related to accounting number (Yes=1, No=0)	Bonus	23	0.43	0.51
High debt-equity ratio or existence of debt covenant(High/Yes=1, Low/No=0)	R _{D/E}	23	0.26	0.45
Size of entity based on turnover or total assets (Big=1, Small/medium=0)	Size	23	0.57	0.51
Change in accounting policies (Yes=1, No=0)	Acct	23	0.26	0.45
Recent management buyout/takeover/acquisition or IPO (Yes=1, No=0)	Own	23	0.22	0.42
Exploration aggressiveness or timing (Aggressive=1, Non-aggressive=0)	Expl	23	0.65	0.49

Table 2(b):
Descriptive Statistics of Firm Characteristics Variables – Correlations

	Bonus (1)	Size (1)	R_{D/E} (1)	Expl. (1)	ΔOWN (1)
Size (1)	0.219				
R _{D/E} (1)	(0.083)	(0.188)			
Expl. (1)	0.135	0.077	(0.067)		
ΔOWN (1)	0.044	0.121	0.111	(0.114)	
Δacct, (1)	(0.364)	(0.210)	(0.190)	0.399	(0.327)

To test hypothesis H2_A, the extent to which the component elements of MISI are related to lobbying intensity is explored through a cross tabulation. The MISI elements that show a statistically significant relationship with lobbying intensity would be the characteristics that predispose respondents to lobbying strongly against the issues paper's recommendations. Since the characteristics indicate propensity to smooth income, the lobbying would be indicative of intent to smooth income or defend strategies for doing so. The next section reviews the results.

Discussion and Interpretation of Results

Analysis of Results

Table 3 (statistically significant items are shown in bold font) depicts the relevant statistics of the cross tabulation. The null hypothesis assumes the characteristics and the distribution of lobbying intensity observed are independent. The Pearson Chi-Square (χ^2) statistic tests this hypothesis. It appears the dependence between $R_{D/E}$ ($\chi^{2(1,N=23)}=6.659$, p-value = 0.010) and ΔOwn ($\chi^{2(1,N=23)}=4.480$, p-value = 0.034) respectively and lobbying intensity is statistically significant at 5% (i.e., at the $\alpha = 0.05$ level). The Likelihood Ratio and Linear-by-Linear Association tests also confirm these results for the two characteristics. Nevertheless, the Chi-Square statistic with continuity correction¹⁰ (χ_c^2) is significant for $R_{D/E}$ ($\chi_c^2(1, N = 23) = 4.385$, *p-value = 0.036*) but not for ΔOwn ($\chi_c^2(1, N = 23) = 2.556$, *p-value = 0.110*) at 5%. However, since the continuity correction often gives overly conservative results that fail to reject the null hypothesis when it should, Fisher's Exact Test ($R_{D/E}$: p-value = 0.018 and ΔOwn : p-value = 0.056, significant at 5% and 10% levels respectively) is more conclusive in establishing dependence between these characteristics and lobbying intensity.

Table 4 gives the directional and symmetric measures for the two characteristics with significant association with lobbying intensity.

¹⁰ This statistic is suggested to adjust for the normal Chi-Square statistic being a continuous distribution approximation for the discrete set, as well as the small sample size (N=23) and incidences of expected counts in some cells being less than 5.

Table 3
Cross Tabulation of Lobbying Intensity against Characteristics Indicative
of Contexts Likely to Induce Income Smoothing

Lobbying intensity	Crosstab	Bonus ⁽¹⁾		Total	Size ⁽²⁾		Total	R _{D/E} ⁽³⁾		Total	
		No	Yes		Small	Big		Low	High		
Lobbying intensity	Support	C	4	5	9	4	5	9	4	5	9
		EX	5.09	3.91	9	3.91	5.09	9	6.65	2.35	9
	Objection	C	9	5	14	6	8	14	13	1	14
		EX	7.91	6.09	14	6.09	7.91	14	10.35	3.65	14
Total	C	13	10	23	10	13	23	17	6	23	
	EX	13	10	23	10	13	23	17	6	23	
Chi-Square Tests		Value	df	p(2s)	Value	df	p(2s)	Value	df	p(2s)	
Pearson Chi-Square		0.878	1	0.349	0.006	1	0.940	6.659	1	0.010	
Continuity Correction ⁽⁷⁾		0.256	1	0.613	0.000	1	1.000	4.385	1	0.036	
Likelihood Ratio		0.878	1	0.349	0.006	1	0.940	6.832	1	0.009	
Linear-by-linear Association		0.839	1	0.360	0.005	1	0.942	6.370	1	0.012	
Fisher's Exact Test			p1	p1		p1	p1		p1	p1	
			<u>(2s)</u>	<u>(1s)</u>		<u>(2s)</u>	<u>(1s)</u>		<u>(2s)</u>	<u>(1s)</u>	
			0.417	0.306		1.000	0.637		0.018	0.018	

Table 3, continued

Crosstab		Expl ⁽⁴⁾		Total	ΔOwn ⁽⁵⁾		Total	ΔAcct ⁽⁶⁾		Total	
		Nonaggr.	Aggr.		No	Yes		No	Yes		
Lobbying intensity	Support	C	3	6	9	5	4	9	8	1	9
		EX	3.13	5.87	9	7.04	1.96	9	6.65	2.35	9
	Objection	C	5	9	14	13	1	14	9	5	14
		EX	4.87	9.13	14	10.96	3.04	14	10.35	3.65	14
	Total	C	8	15	23	18	5	23	17	6	23
		EX	8	15	23	18	5	23	17	6	23
Chi-Square Tests		Value	df	p(2s)	Value	df	p(2s)	Value	df	p(2s)	
Pearson Chi-Square		0.014	1	0.907	4.480	1	0.034	1.720	1	0.190	
Continuity Correction ⁽⁷⁾		0.000	1	1.000	2.556	1	0.110	0.680	1	0.409	
Likelihood Ratio		0.014	1	0.907	4.515	1	0.034	1.874	1	0.171	
Linear-by-linear Association		0.013	1	0.909	4.286	1	0.038	1.645	1	0.020	
Fisher's Exact Test			p1	p1		p1	p1		p1	p1	
			<u>(2s)</u>	<u>(1s)</u>		<u>(2s)</u>	<u>(1s)</u>		<u>(2s)</u>	<u>(1s)</u>	
			1.000	0.633		0.056	0.056		0.340	0.208	

Notes: C = count; EX = expected count. (1): 1 cells (25.0%) have expected count less than 5; minimum expected count is 3.91. (2): 1 cells (25.0%) have expected count less than 5; minimum expected count is 3.91. (3): 2 cells (50.0%) have expected count less than 5; minimum expected count is 2.35. (4) 2 cells (50.0%) have expected count less than 5; minimum expected count is 3.13. (5) 2 cells (50.0%) have expected count less than 5; minimum expected count is 1.96. (6) 2 cells (50.0%) have expected count less than 5; minimum expected count is 2.35. (7) Computed only for a 2x2 table. P(2s): asymptotic sig. (2-sided); p1: exact sig. (2s) and 1-sided (1s).

Table 4
Directional and Symmetric Measures for the Two Characteristics
with Significant Association with Lobbying Intensity

Directional Measures		$R_{D/E}$				ΔOwn			
		Value	Asymp. Std. Error ⁽¹⁾	Approx. T ⁽²⁾	Approx. Sig.	Value	Asymp. Std. Error ⁽¹⁾	Approx. T ⁽²⁾	Approx. Sig.
Lambda	Symmetric	0.333	0.281	1.022	0.307	0.214	0.124	1.397	0.162
	Lobbying-intensity dependent	0.444	0.203	1.737	0.082	0.333	0.203	1.397	0.162
Goodman and Kruskal tau	Lobbying-intensity dependent	0.290	0.182		0.012⁽³⁾	0.195	0.157		0.038⁽³⁾
Uncertainty coefficient	Symmetric	0.239	0.163	1.426	0.009⁽⁴⁾	0.165	0.142	1.124	0.034⁽⁴⁾
	Lobbying-intensity dependent	0.222	0.155	1.426	0.009⁽⁴⁾	0.147	0.130	1.124	0.034⁽⁴⁾
Symmetric Measures		Value			Approx. Sig.	Value			Approx. Sig.
Phi		0.538			0.010	0.441			0.034
Cramer's V		0.538			0.010	0.441			0.034
Contingency coefficient		0.474			0.010	0.404			0.034

Notes: (1) Not assuming the null hypothesis. (2) Using the asymptotic standard error assuming the null hypothesis. (3) Based on chi-square approximation. (4) Likelihood ratio of chi-square probability.

Using the Goodman and Kruskal tau (τ) directional measure as a reference, $R_{D/E}$ ($\tau = 0.290$, p-value = 0.012) and Own ($\tau = 0.195$, p-value = 0.038) indicate a reduction in the error rate of predicting lobbying intensity by 29.0% and 19.5% respectively over what random chance would produce. Both of these measures are significant at the 5% level. With the Uncertainty Coefficient (UC) measure, the corresponding proportional reductions in error in predicting the value of lobbying intensity are 22.2% for $R_{D/E}$ (UC = 0.222, p-value = 0.009) and 14.7% for Own (UC = 0.147, p-value = 0.034) respectively, both significant at the 5% level.¹¹ The equivalent Lambda measures are not significant.

The symmetric measures – Phi (ϕ), Cramer's V (which is equal to Phi in this case) and Contingency Coefficient (CC)—are pseudo-correlation measures, which indicate the strength of the relationship being tested. They appear to be relatively high for the $R_{D/E}$ ($\phi = 0.538$, p-value 0.010; CC = 0.474, p-value = 0.010) and Own ($\phi = 0.441$, p-value 0.034; CC = 0.404, p-value = 0.034) characteristics and significant at the 5% level.

The above statistics are preferred because the variables are nominal or categorical and are particularly suited for small sample sizes. However, since the lobbying intensity and characteristics are binary, the means of the variables represent the proportion of cases belonging to the group coded "1" in each variable. Thus, it is possible to test hypothesis H_{2A} as a t-test of the difference of means of the correspondents with referent characteristics who objected to (1) or supported (0) the standard setter's views. This test also confirms that only $R_{D/E}$ ($t = 2.553$, p-value = 0.027, $df = 10.684$) and Own ($t = 1.967$, p-value = 0.076, $df = 10.684$) show a significantly different mean across the two categories of lobbying intensity at 5% and 10% levels respectively. Further tests were carried out to determine if there was a definitive pattern in the responses of (1) oil and gas firms as opposed to mining industry firms and (2) firms who employed a method other than the successful efforts method. However, the numbers of firms that met these criteria (12 and 6 respectively) were not sufficient to provide an adequate sample size for the analysis.

¹¹ The Uncertainty Coefficient also reports a symmetric value, which is neutral on predictive direction. The computed values are 23.9% for $R_{D/E}$ (UC = 0.2392, p-value = 0.009) and 16.5% for Own (UC = 0.165, p-value = 0.034) respectively. These results indicate a greater causation from lobbying intensity to these characteristics, but the hypothesis tested in this study is the prediction of lobbying intensity given these characteristics.

Interpretation of Results in Relation to Theory

In the context of the second and third research questions (see section 1) tested as hypothesis H2_A, the preceding results are largely consistent with income smoothing theory in relation to predicting the way firms possessing the characteristics would behave. The significant R_{D/E} variable representing existence of a high debt/equity ratio conforms to the arguments in prior studies (see Deakin, 1979 and Collins *et al.*, 1980) suggesting that the measures proposed would severely limit the ability of firms to raise debt finance. The significance of R_{D/E} corresponds to increasing likelihood of the incidence of lobbying, i.e., firms with a high debt/equity ratio appear to have disagreed more with the issues paper's proposals. Firms, especially those with a debt covenant that preconditions provision of debt finance on the attainment or non-violation of some key financial ratios, would desire reports that reflect favorable terms for debt financing, typifying intent to smooth income. The observed lobbying intensity may therefore be consistent with income-smoothing intent. Similarly, the relevance of the ΔOwn variable (representing a recent management buyout, initial public offer [IPO] or proxy context) fit well with the notion that firms in such scenarios would desire smoother income streams to either avert a takeover bid or achieve significant take-up of shares in the equity market (see DeAngelo, 1986 and 1988).

On the other hand, the lobbying pattern appears to be independent of the remaining characteristics examined in this study. While this result does not preclude their presence in incoming smoothing firms as established in prior studies, they do not feature in a manner that influenced the views of respondents to any degree regarding the issues under consideration.

Significance of Result and Review of Research Design

Pincus and Rajgopal (2002) propose an empirical model for separating the decision of whether to hedge oil price risk from the decision of the extent of hedging and feed this decision as an endogenous variable into the extent of income smoothing by means of abnormal accounting accruals.¹² While they could not incorporate underlying FC versus SE accounting choice as an endogenous variable for managing income in their model, the lobbying

¹² Their model builds on the works of Geczy *et al.* (1997 and 1999), Haushalter (2000), Barton (2001) and a refined Jones model (Dechow *et al.*, 1995) that includes interactions of explanatory variables.

intensity measure used in this study reveals that the choice of method in itself constitutes only the first step of the income-smoothing intention. After selecting a particular method, which must then be used consistently according to IFRS 6 (IASB, 2004), it may be possible to smooth income by reference to measures that the selected method gives prominence to as a reasonable basis for making discretionary accruals. This may be the certainty of spreading out E&E expenditure (FC) or a purposeful determination of the timing and magnitude of E&E expenditure to incur (SE).

Thus, the discriminating attribute need not be the method of accounting adopted but rather the presence of some other attribute. Intuitively, it might be worthwhile to examine a broader spectrum of firms partitioned based on both method of accounting (FC or SE) and the characteristics identified above in studies using discretionary accrual to test for income smoothing. Contrary to the issues paper's arguments that the FC and SE methods are income smoothing choices, it is safe to conjecture that the method adopted is not as relevant as the underlying firm characteristic in the decision whether to smooth income or not.

The usefulness of this study's findings as highlighted above must however be viewed against conceptualization issues¹³ with respect to the variables used in the tests. As with the lobbying intensity measure developed by Asekomeh *et al.*, (2006), the firm characteristics variables are dichotomous categorical variables. In this way, the analysis is improved by eliminating, as far as possible, difficulties of comparing company fundamentals where accounts are not necessarily prepared using the same assumptions. The improvement arises because emphasis should only be on the existence or absence of the relevant attributes, with respect to just two referent categories, e.g., objection or support. There appears to be no further information that could be extracted from creating more categories, especially where the standard-setter's objective is to arrive at a unitary method of accounting from two alternatives. Weetman *et al.*'s (1996) subjective evaluation 5-point scale (reduced to a binary scale in Asekomeh *et al.*, 2006) would reveal greater spread of responses around the Steering Committee's preferred treatment of accounting issues. However, such categorization would have limited scope for the kind of statistical analysis performed in this study and is unlikely to help exemplify the kind of dichotomy that the FC and SE methods debate typifies, as did the binary variables used.

¹³ This section addresses questions raised in earlier exposures of the paper and critique of Asekomeh *et al.*'s (2006) formulation of the lobbying intensity measure.

Similarly, the lobbying intensity and measures for characteristics likely to indicate income-smoothing intent relate to only the 23 extractive firms that responded to the issues paper.¹⁴ The sample size ($N = 23$) is small for making reasonable multivariate inferences about the population (i.e., all extractive industry firms), but it is a self-selected sample whose size is determined by the number of respondents during the period for which the issues paper was open for comment. On the positive side, data obtained unobtrusively, as in this case, eliminates management gaming bias (Chung, 1999; Goergiou, 2004) and prevents a distortion of the distribution. The computed univariate and bivariate statistics are particularly suitable for small sample sizes.

The 23 responding firms are in different countries and some have diverse operations and participate in non-extractive industries activities. While it would have been desirable to computationally isolate the distorting effects of these extraneous factors,¹⁵ the limitations are reasonably and quite simply obviated in the study by coding the predictor variables in terms of the relative absence or presence of a particular accounting feature/magnitude rather than specific units-based accounting numbers that would have required currency conversion or other accounting adjustments. Similarly, it was not necessary to apportion weights to the “votes” of respondents based on their size in determining the lobbying intensity measure. Each was taken as a single entry and since one of the characteristics variables measured the impact of firm size on lobbying intensity, adjusting “vote” counts for firm size would have eliminated the ability to test any insight provided by that variable. It is believed that large firms are more likely to resort to covert forms of lobbying (including using political influence) than small firms (see Sutton, 1984 and Larson, 1997);

¹⁴ This meant the sampling frame consisted of the limited (self-selected) sample of responding firms, thus excluding other firms that possibly resorted to other forms of (covert) lobbying. Covert lobbying cannot be reasonably ascertained, so it is difficult to generate an exact measure of lobbying intensity. Indirect forms of lobbying may even be employed in comment letters, wherein respondents simply align with the views of one or several previous respondents. Instances where a parent company and one or several of its subsidiaries (or members within the same group) send separate (but not necessarily different) responses to the issues may be suggestive of respondents' perception of the process as a 'voting' scenario if they believe the standard setter holds such a view.

¹⁵ These include (and are not limited to) the distortion of unrelated lines of business not covered by the issues paper/standard; the effects of reporting in different regulatory regimes or markets with different listing requirements and functional/reporting currencies; and the possibility of transfer pricing between entities within the same group.

however, such forms of lobbying are not empirically quantifiable and size does not appear to be a factor in lobbying pattern in this study.

Whereas prior studies (O'Keefe and Soloman, 1985; MacArthur, 1988; Tutticci *et al.*, 1994 and Weetman *et al.*, 1996) use or examine exposure drafts that give more definite indications¹⁶ of the standard preparers' preferred position on each accounting issue being considered, the extractive industries issues paper had some issues on which the Steering Committee had not developed a tentative view. While this means that respondents have no indication of the Steering Committee's preferred treatment of such matters, it ensures that respondents are more likely to reveal their intended or actual treatment of the issue concerned. Nevertheless, such issues provide little scope for the kind of enquiry performed as this study compared responses against the Steering Committee's (benchmark) tentative views, using the degree of support for or objection to the proposals as an indication of the lobbying effort.

Conclusion

The income smoothing intent of firms, which this study demonstrates as conveyed by the lobbying behavior, opens up new perspectives for attempting to model the behavior of earnings, as well as facilitating the process of developing a substantive extractive industries accounting standard. The standard setting bodies face ethical questions about the nature of empirical evidence when they consider assertions made by respondents against or in favour of a proposed standard. There should be a process for assessing the validity of assertions in such representations. However, the choices before the regulatory bodies are not always clear-cut, as there are numerous political standpoints in representations.

A holistic approach to the standard setting process by extenuation of the inferences from observed lobbying patterns has proved quite useful in understanding the likely underlying assumptions about firms' income smoothing decisions. The design of this study has involved explicating the relationship between views held about proposals and characteristics of firms holding these views, and questioning whether income-smoothing considerations explain the observed response pattern. The findings should be pertinent as we enter a new phase in a revisit of the extractive industries accounting standard.

¹⁶ Exposure drafts are at a more advanced stage in the standard setting process, coming just prior to actual accounting standards being issued.

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