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IMPACT OF NON-AUDIT ASSURANCE LEVEL (COMPILATION VERSUS REVIEW) ON PRODUCTION MANAGEMENT OF PRIVATE MANUFACTURING COMPANIES

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ABSTRACT

Private small companies have been the subject of much interest by accounting regulators recently. The AICPA issued SSARS 19 and the Financial Reporting Framework for Small- and Medium-Sized Entities in 2009 and 2013, respectively. The Financial Accounting Foundation issued the Blue Ribbon Panel Report on Standard Setting for Private Companies in 2011. This is apparently the first study to compare reporting practices of small private companies whose financial statements are compiled or reviewed.

Overall results indicate that reviewed companies tend to exhibit positive abnormal production while compiled companies tend to exhibit negative abnormal production. However, for the companies most likely to engage in earnings management, only separately taxable reviewed entities tend to manage earnings higher to meet earnings benchmarks. External users of reviewed and compiled statements should be aware of the tendencies of the different types of entities to manage production and inventory levels.

INTRODUCTION

The AICPA (2013) recently issued its *Financial Reporting Framework for Small- and Medium-Sized Entities* (FRF for SMEs). The Framework resulted from concerns that traditional GAAP statements were expensive and perhaps not useful or relevant to relatively small business enterprises. This Framework and the *Blue Ribbon Panel Report on Standard Setting for Private Companies* from the Financial Accounting Foundation (2011) indicate a heightened interest in financial reporting by relatively small business entities, sometimes called the Big GAAP/Little GAAP debate (Burton and Hillison 1979; Grud 2006; Thrower 2010; Wright et al. 2012). However, a paucity of research has been conducted on United States companies' non-audited financial statements.

This study focuses on financial reporting for private companies whose financial statements have been provided non-audit-level assurance (reviewed) or no assurance (compiled) by independent accountants. Information obtained from Sageworks Incorporated's privately held company database was used for analyses. The Sageworks database contains many data items for some included private companies. However, many observations from reviewed or compiled data lack information on many items necessary to construct complex earnings management measures used in previous research.

Most private manufacturers in the Sageworks database provide sufficient information to examine one form of earnings management through inventory and production decisions. Only manufacturers can substantially increase or decrease reported income by adjusting work in process and finished goods inventories to time the expensing of fixed manufacturing costs. Consequently, due to data limitations, I focus on use of this real earnings management technique

manufacturing industries. Following previous studies (Gunny 2010; Chien et al. 2011; Cohen et al. 2008; Roychowdhury 2006), I use an abnormal production measure to examine whether differences exist in production levels between statements possessing the different assurance levels. I also examine whether the tax status (separately taxed or pass-through entities) of these companies impacts their abnormal production.

SSARS 10, *Performance of Review Engagements* (AICPA 2004), issued in 2004, provided substantial clarification and guidance for independent accountants' review services. One major change was that this standard required accountants performing review services to make specific fraud related inquiries of management and expanded documentation requirements. My sample comes from financial statements impacted by SSARS 10: 4,883 yearly observations of 2,709 private companies over the period of 2005-2008 from the Sagemworks database. (Note: Sagemworks made entity-level data available to researchers for a short period of time, but their data is no longer publicly available other than in summary form.)

I find that abnormal production differs between companies whose financial statements were reviewed and those whose statements were compiled. Overall, financial statements that were reviewed tend to exhibit relatively more income-increasing abnormal production than compiled financial statements, while compiled financial statements tend to exhibit relatively more income-decreasing abnormal production than reviewed statements. Overall, abnormal production in reviewed and compiled statements does not appear to be impacted by organizational tax status. I also examine abnormal production of manufacturing companies most likely to have an incentive to engage in earnings management. Reviewed taxable companies just meeting earnings benchmarks exhibit significantly higher abnormal production, but this behavior is not evident for other company groups.

The next section of this article contains a review of related literature and a discussion explaining my hypotheses. The following sections describe the sample, explain statistical methods, and discuss results of empirical analysis. The article ends with a conclusions section.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Financial reporting quality has been examined in conjunction with earnings management in financial statements. One method of earnings management (sometimes referred to as real activities management) involves managing operational activities to impact bottom line earnings. Roychowdhury (2006) and Gunny (2010) found that companies use real activities management to avoid reporting losses or just meeting earnings benchmarks. Real activities management has direct cash flow consequences that may negatively affect future operating performance (Gunny 2010; Zhao et al. 2012).

Examples of real activities management include: offering unusual price discounts at end of a period to increase sales, reducing selling, general, and administrative expenses (SG&A), reducing research and development expenditures, and decreasing or increasing production and inventory levels to increase or decrease costs of goods sold. Several studies have found such activities have impacted short-term reported earnings of publicly-traded companies (e.g. Cohen et al. 2008; Cohen et al. 2010; Eldenburg et al. 2011; Gunny 2010; Roychowdhury 2006; Thomas and Zhang 2002; Zhao et al. 2012). Due to data limitations, I focus on one method of real activities management: decreasing or increasing production and inventory levels to increase or decrease costs of goods sold. Consequently, my sample only includes manufacturing companies.

Level of Assurance

I also limit the sample to privately held companies whose financial statements were either compiled or reviewed by an independent accountant to focus on whether an independent accountant's review helps to reduce earnings management through actual production and inventory decisions or reporting decisions. Barefield, et al. (1993) found that economic forces impacting the market for audit services also apply to compilation and review services. Demand for review services increased with the size of the client and the existence of accounting based loan covenants. They also found that accountants charged significantly more for review engagements than for compilations. Like audit engagements, Munter and Tatum (1994) found that accountants conducting SSARS engagements apparently consider, at least implicitly, inherent and control risk factors.

Reinstein et al. (2006) noted that for some time, CPAs have worried that financial statement users place too much confidence in limited-assurance statements prepared for nonpublic entities. Based on a survey of practicing CPAs and bankers, they concluded that both groups had more confidence in relying on financial statements for decision making when a CPA was somehow associated with the statements. In 2004, the AICPA (2004) offered substantial clarification and guidance related to review services in *SSARS 10, Performance of Review Engagements*. This standard required specific fraud related inquiries of management and clarified and expanded documentation requirements for review engagements. Most of my data comes from years in which *SSARS 10* would be in effect for review engagements. I present the following hypotheses (in the null form):

- H_{1a} *Reviewed financial statements for private-taxable companies and those compiled for taxable companies exhibit similar levels of abnormal production.*
- H_{1b} *Reviewed financial statements for private pass-through entities and those compiled for pass-through entities exhibit similar levels of abnormal production.*

Tax Status

Private company owners have several options for the legal form of their business entities. Publicly-traded corporations are formed as C Corporations under Internal Revenue Service regulations and pay separate income taxes at the corporate level. IRS (2013) statistics indicate that C Corporations are much more likely to be audited by the IRS than are other business entities. Owners of C Corporations are taxed directly only on dividends distributed from the company. According to the IRS (2011) data, only 5.7% of companies filing tax returns with the Internal Revenue Service in 2008 were C corporations. Consequently, most privately held companies in the United States are not organized as C Corporations.

Other legal forms available for private companies include: incorporating as an S corporation or limited liability corporation (LLC), forming as a limited liability partnership (LLP) or other form of partnership, and individual ownership. Earnings of these other legal forms of business are not generally taxed at the entity level; earnings typically flow through to owners and are included on owners' individual income tax returns. Consequently, legal forms other than a C-corporation can reduce the combined tax liability of a business and its owners, which can produce different incentives for private companies to adjust inventory levels to increase or decrease income, depending upon their tax status.

H_{2a} Reviewed financial statements for private-taxable companies and reviewed statements for pass-through companies exhibit similar levels of abnormal production.

H_{2b} Compiled financial statements for private-taxable companies and compiled statements for pass-through companies exhibit similar levels of abnormal production.

Size of the Company

The largest manufacturing company in the Sageworks database for any year had \$150 million in sales. Owner-managers of small private companies might be able to easily adjust production and inventory to achieve a desired level of taxable income. Consequently, I also limit the sample to manufacturing companies with sales of at least \$1 million. Previous research has found that earnings management is impacted by company size. Larger companies may experience more difficulty manipulating earnings because they have more effective internal control over financial reporting and may be subject to closer scrutiny by internal and external accountants, and tax auditors. Also, the incentives to increase or decrease income may vary between relatively different sized companies. I examine the following hypothesis to investigate the size impact on abnormal production:

H₃ The size of private companies with reviewed or compiled financial statements does not impact the level of abnormal production.

EMPIRICAL ANALYSES

Data

Sageworks Incorporated maintains a database of private company financial information collected from Sageworks' customers (mainly banks and CPA firms) who enter financial statement information from their clients/customers into the Sageworks system. Sageworks provides summary information by industry segment, client size, and other factors to their banking and accounting firm customers. Sageworks' customers then can compare individual client financial statement information to peer company summary information (Minnis 2011).

For a brief time, Sageworks made firm level data from their database available to researchers with companies identified only by an ID number. The Sageworks data set contains many items including: balance sheet and income statement items, calculated ratios, some cash flow items, the Level of Assurance provided by independent accountants, industry (NAICS code), legal form, and location. The amount of information available varies greatly by company. A few companies report all items, while many report only a few items.

I obtained data for 2001 through 2008 from a Sageworks database. (The latest year used was 2008 because at the time the data set was obtained, complete data for 2009 was not available.) My sample selection approach is summarized in Table 1. The database contained 423,631 observations for 2001 through 2008. My research questions deal with production and inventory decisions. Consequently, I limited my analyses to manufacturing companies reporting sales in the NAICS codes 311822 to 339999, which included 31,835 observations. I identified 3,765 of these observations as duplicate annual observations or quarterly data. After dropping those observations, 28,070 observations remained. Relative to later years, years prior to 2005 contained considerably less observations that had three consecutive years' data necessary for

analysis. Sageworks had fewer subscribers during their start-up phase for the data set in the early 2000s (Minnis 2011). Selection bias may be present in earlier years; thus, I omitted all observations prior to 2005, leaving 20,542 observations.

Table 1
SAMPLE

	<u>Sageworks Total Observations</u>	<u>Sageworks Manufacturing Observations with sales</u>
2001-2004	87,655	7,528
2005	73,914	5,671
2006	89,674	6,548
2007	92,410	6,534
2008	<u>79,978</u>	<u>5,554</u>
	423,631	31,835
Less duplicates and quarterly		<u>3,765</u>
Corrected total of manufacturing observations		28,070
Less: 2001-2004 observations		<u>7,528</u>
Manufacturing observations from 2005-2008		20,542
Less: Observations < 3 yr lags or missing variables, or < \$1 million in sales		12,624
Less: Observations in 3-dig NAICS Codes < 15 observations in a year. Plus, for Sageworks, observations whose data source was audited, company prepared, annualized, tax return, blank, or other.		<u>2,475</u>
Usable Observations with all variables		5,443
Less: extreme observations		<u>560</u>
Sample for main analyses ¹		<u>4,883</u>

¹ The sample included 2,709 separate Sageworks companies.

For small companies, a small manipulation in production and inventory levels could have a magnified effect on income. Or conversely, small companies may not be as able to manage earnings as larger companies. Consequently, I restricted the sample to companies with sales of \$1 million or greater. I also needed three consecutive years' data to estimate abnormal production for an observation. These two criteria eliminated another 12,624 observations.

Also, to limit my sample to observations in which independent accountants offered a low level of assurance, or no assurance on the financial statements, observations were deleted that had a data source listed as audited, annualized, company prepared, other, tax return, or left blank.

(Only the audited source contained a substantial number of observations.) In addition, at least 14 other observations from the same three-digit NAICS code for a year were required for the abnormal production calculation. This resulted in the deletion of companies from three-digit NAICS codes with few observations. Deletion of companies with financial statements other than those compiled or reviewed by an independent accountant or in a three-digit NAICS code with few observations left 5,443 Sageworks observations.

I followed Minnis (2011) and deleted extreme observations he defined as firm-years where: (1) net income, cash flow from operations, or property, plant and equipment, exceeded total assets at year-end (2) sales decreased by more than 50% or increased by more than 100%, or (3) two times total assets were less than total liabilities. Consequently, 560 observations were deleted as extreme, leaving 4,883 private company observations from 2,709 separate companies as a sample for the main analysis.

The sample consists of observations from a broad range of manufacturing industries, with over 21% coming from fabricated metal products manufacturing companies and over 15% from machinery manufacturing. The percentages of observations by three-digit NAICS codes are similar for the sample broken down by reviewed and compiled observations. The distribution of the sample in total and by assurance level (reviewed and compiled) and by tax status (pass-through and taxable) remains relatively stable from 2005 to 2008. The number of observations increases substantially from 2005 to 2006 and from 2006 to 2007; total observations are essentially the same for 2007 and 2008.

Statistical Models

I used Roychowdhury (2006: 345) equation 4, and Cohen et al. (2008: 766) equation 7, within each three-digit NAICS code for each year, to estimate abnormal production.

$$\text{PROD}_{t,f}/A_{t-1,f} = \alpha_0 + \alpha_1(1/A_{t-1,f}) + \alpha_2(\text{Sales}_{t,f}/A_{t-1,f}) + \alpha_3(\text{Salechg}_{t,f}/A_{t,f}) + \alpha_3(\text{Salechg}_{t-1,f}/A_{t-1,f}) + \varepsilon_{t,f} \quad (1)$$

where: $\text{PROD}_{t,f}$ = (cost of goods sold_{t,f} + change in inventory_{t,f})

A_{t-1} = total assets at the beginning of the year,

Sales_t = current year net sales,

$\text{Salechg}_{t,f}$ = change in sales during current year,

$\text{Salechg}_{t-1,f}$ = change in sales during previous year, and

$\varepsilon_{t,f}$ = abnormal production (Ab_Prod_t) is the error term from the regression; a positive Ab_Prod_t would increase income while a negative Ab_Prod_t would reduce income.

To follow analyses similar to Gunny (2010), I also constructed variables to identify companies most likely to want to manage their incomes: those wanting to avoid reporting a loss or reporting lower net income than that of the previous year. My variables include: (1) $\text{MEET}_0 = 1$ if net income scaled by beginning total assets was less than 0.01, but greater than or equal to 0.00, (2) $\text{MEET}_{\text{last}} = 1$ if net income of the current year scaled by net income of the previous year was less than 0.01, but greater than or equal to 0.00, and (3) the greatest incentive/likelihood of engaging in earnings management to increase income would be for any observations falling within these categories and consequently were coded as $\text{BENCH} = 1$.

I used the following formula, based on Gunny (2010), to examine if companies most likely to manage income had different Ab_Prod_t than other companies:

$$Ab_Prod_t = \alpha_0 + \alpha_1(BENCH_t) + \alpha_2(Size_lnA_{t-1}) + \alpha_3(ROA_t) + \alpha_4(Industry_f) + \alpha_5(Year_g) + \varepsilon_t \quad (2)$$

where: Ab_Prod_t was defined as the residual from Equation 1 above,
 $BENCH_t$ was defined in the previous paragraph,
 $Size_lnA_{t-1}$ = the natural log of total assets at the beginning of the year,
 ROA_t = income before extraordinary items divided by total assets at the beginning of the year,
 $Industry_f$ = 1 if company is in industry f (based on 3-digit NAICS codes), 0 otherwise,
 and
 $Year_g$ = 1 if the observation is from year g, 0 otherwise.

To compare abnormal production of different groups within the sample, I conducted analyses for the sample over all and four subgroups of (1) reviewed taxable companies, (2) reviewed pass-through entities, (3) compiled taxable companies, (4) or compiled pass-through entities.

Results

Table 2 provides the means for the total Sageworks company sample and the four subsample groups for variables from Equations 1 and 2. The null Hypotheses 1_a and 1_b state that financial statements that are compiled or reviewed will exhibit similar abnormal production, while null Hypotheses 2_a and 2_b state that financial statements for separately taxed companies and pass-through entities will exhibit similar abnormal production. The means for abnormal production (Ab_Prod_t) reported in Table 2 for all subsamples are significantly different from zero; the means of reviewed groups are positive while the means are negative for the compiled groups. These results provide evidence to support rejection of Hypotheses 1_a and 1_b , but no evidence to reject Hypotheses 2_a and 2_b .

For the full sample and subsamples, Table 3, Panel A presents the parameter estimates and t-statistics resulting from the Model 2 regression analysis (with Ab_Prod_t as the dependent variable). To keep the table manageable, I report statistics for analyses without the data year or three-digit NAICS code indicator variables. $BENCH_t$ in Model 2 is designed to measure whether companies most likely to manage earnings actually exhibit higher abnormal production. (In analyses for overall and for separate sample subgroups, no dummy variables for the data year were significant in any model. No sign or significance on any other variables changed when data years were included in the model. The only change of sign or significance when the three-digit NAICS codes were included in the model was that the negative t-statistic for $Sales_quint_low$ becomes marginally significant in Table 3, Panel B.)

In line with evidence provided in Table 2, $BENCH_t$ exhibits a positive, significant parameter estimate for the reviewed taxable group. However, $BENCH_t$ parameter estimates are insignificant over all and for the other sample subgroups. These results provide support to reject H_{1a} which hypothesizes no difference in the abnormal production of reviewed-taxable and

compiled-taxable companies. No support is found to reject H_{1b} : no difference between reviewed pass-through and compiled pass-through companies. The parameter estimates on $BENCH_t$ provide evidence to reject hypothesis H_{2a} because tax status appears to influence Ab_Prod_t behavior of the taxable reviewed group compared to pass-through reviewed companies. Taxable companies tend to manage earnings upward to meet earnings benchmarks. Insignificant parameter estimates for $BENCH_t$ on the compiled statement groups provide no support to reject H_{2b} .

Table 2
MEANS AND STANDARD DEVIATIONS OF VARIABLES
FOR THE FULL SAMPLE AND VARIOUS SUBSAMPLES

Variable	N=	All 4883	Reviewed- Taxable 1226	Reviewed- Pass- Through 1526	Compiled - Taxable 1010	Compiled Pass- Through 1121
PROD_A_t_1		1.968	1.780	1.977	1.991	2.142
		1.514	1.058	1.318	1.844	1.809
Sale_A_t_1		2.767	2.435	2.679	2.901	3.130
		1.876	1.198	1.512	2.251	2.412
salechg_A_t_1		0.206	0.148	0.203	0.228	0.252
		0.748	0.533	0.571	0.676	1.125
salechg_1_A_t_1		0.233	0.152	0.217	0.254	0.325
		0.734	0.529	0.517	0.814	1.032
BENCH _t		0.059	0.082	0.045	0.072	0.044
		0.236	0.274	0.206	0.259	0.205
Size_In_TA		14.878	15.011	15.234	14.489	14.597
		1.053	0.914	0.953	1.088	1.100
ROAt		0.113	0.052	0.140	0.075	0.179
		0.204	0.114	0.215	0.147	0.272
AB_PROD		0.000	0.035	0.022	-0.032	-0.039
		0.389	0.334	0.349	0.422	0.453
AB_PROD		0.279	0.249	0.253	0.294	0.335
		0.270	0.225	0.241	0.305	0.308
AB_PROD = 0 (two-tailed Z test stat)		0.00	3.67***	2.46**	-2.41**	-2.88***

,*--Significant at .05 and .01, respectively.

Variable Definitions:

PROD_A_t_1 = (cost of goods sold_{t,f} + change in inventory_{t,f})/total assets at the beginning of the year.

Sale_A_t_1 = current year net sales/total assets at the beginning of the year.

salechg_A_t_1 = change in sales during current year /total assets at the beginning of the year.

salechg_1_A_t_1 = change in sales during previous year /total assets at the beginning of the year.

BENCH_t = 1 if net income scaled by total assets at the beginning of the year was greater than or equal to zero, but less than 0.01, or if net income of the current year scaled by net income of the previous year was greater than or equal to zero, but less than 0.01, else 0.

Size_In_TA = the natural log of total assets at the beginning of the year.

ROAt = income before extraordinary items divided by total assets at the beginning of the year.

AB_PROD = the error term from the regression of PROD_A_t_1 is abnormal production.

Table 3

CROSS-SECTIONAL REGRESSIONS RELATING ABNORMAL PRODUCTION TO COMPANIES JUST MEETING ZERO OR PREVIOUS YEAR'S EARNINGS FOR THE FULL SAMPLE AND VARIOUS SUBSAMPLES

Panel A: AB_PROD as dependent variable		All	Reviewed-Taxable	Reviewed-Pass-Through	Compiled - Taxable	Compiled Pass-Through
Variable	N=	4883	1226	1526	1010	1121
Intercept		0.014	0.678	-0.141	-0.010	0.178
		0.16	4.17***	-0.97	-0.05	1.01
BENCHt		0.014	0.063	-0.034	0.036	-0.014
		0.65	2.06**	-0.86	0.76	-0.24
Size_ln_TA		0.003	-0.041	0.016	0.001	-0.008
		0.57	-4.11***	1.73*	0.11	-0.72
ROAt		-0.646	-0.643	-0.685	-0.724	-0.645
		-16.87***	-6.44***	-11.58***	-6.38***	-9.05***
Adjusted R ²		0.082	0.057	0.133	0.045	0.093
Panel B: AB_PROD as dependent variable		All	Reviewed-Taxable	Reviewed-Pass-Through	Compiled - Taxable	Compiled Pass-Through
Variable	N=	4883	1226	1526	1010	1121
Intercept		0.037	0.048	0.087	-0.019	0.009
		4.70***	3.77***	6.99***	-1.05	0.41
BENCHt		0.012	0.057	-0.028	0.032	-0.031
		0.58	1.84*	-0.70	0.68	-0.52
ROAt		-0.649	-0.623	-0.702	-0.718	-0.631
		-16.71***	-6.33***	-11.74***	-6.29***	-8.60***
Sales_quint_low		0.042	0.060	-0.014	0.067	0.093
		2.98***	2.59***	-0.45	2.34**	2.97***
Sales_quint_high		0.078	-0.004	0.072	0.065	0.144
		5.94***	-0.15	3.85***	1.76*	4.51***
Adjusted R ²		0.088	0.048	0.143	0.050	0.108

Parameter estimates and t-statistics for independent variables from Gunny (2010), other than market to book value, and variables for highest and lowest sales quintiles. (T-statistics calculated with Roger's Robust standard errors as recommended by Petersen, 2009.)

*, **, ***--Significant at .10, .05 and .01, respectively.

Table 3 (continued)

Variable Definitions:

BENCH_t = 1 if net income scaled by total assets at the beginning of the year was greater than or equal to zero, but less than 0.01, or if net income of the current year scaled by net income of the previous year was greater than or equal to zero, but less than 0.01, else 0.

Size_In_TA = the natural log of total assets at the beginning of the year.

ROA_t = income before extraordinary items divided by total assets at the beginning of the year.

Sales_quint_low = 1 if observation in the smallest sales quintile, else 0.

Sales_quint_high = 1 if observation in the largest sales quintile, else 0.

As mentioned previously, motivations to manage earnings may differ depending upon the size of the relatively small manufacturing companies included in my sample. In Table 3, Panel A, Size_InA_{t-1} indicates that, for reviewed taxable companies, abnormal production decreases as size increases. In contrast, reviewed pass-through companies exhibit more abnormal production as size increases, at a slightly significant level. Gunny (2010) found insignificant results for a similar size variable when examining the abnormal production of public companies.

Due to the mixed results with Equation 2 reported in Table 3, Panel A, I also examine the impact of size with another equation. Because inclusion in my sample was restricted by sales between \$1 and \$150 million, I replace Size_InA_{t-1} with indicator variables for the smallest quintile and the largest quintile of companies based on sales. The following equation provides another test for size difference impacts on abnormal production.

$$\text{Ab_Prod}_t = \alpha_0 + \alpha_1(\text{BENCH}_t) + \alpha_2(\text{ROA}_t) + \alpha_3(\text{Sales_quint_low}_t) + \alpha_4(\text{Sales_quint_high}_t) + \alpha_5(\text{Industry}_f) + \alpha_6(\text{Year}_g) + \varepsilon_t \quad (2a)$$

where: Ab_Prod_t, BENCH_t, ROA_t, Industry_f, and Year_g were defined previously,
 Sales_quint_low_t = 1, if the observation falls in the lowest quintile of sales for the full sample, 0 otherwise,
 and,
 Sales_quint_high_t = 1, if the observation falls in the highest quintile of sales for the full sample, 0 otherwise.

Table 3, Panel B reports the results of these analyses which reveal similar findings to those in Panel A. (1) Sales_quint_low_t has a significant positive parameter estimate for the reviewed taxable sample while Sales_quint_high is insignificant, and (2) Sales_quint_high has a positive and significant parameter estimate for the reviewed pass-through group while Sales_quint_low is insignificant. These results are hard to explain. Managers of smaller reviewed taxable companies may deliberately manage earnings upward to enhance their ability to increase their availability of credit from lenders. Alternatively, larger reviewed taxable companies face more deterrents to earnings management in general, including the potential for an IRS audit.

The overall, compiled taxable, and compiled pass-through samples exhibit significant positive parameter estimates on Sales_quint_high and Sales_quint_low_t. Results for the compiled company groups suggest that abnormal production may be positive in both the smallest and largest companies in those groups. Results reported in Table 3, Panels A and B, support rejection of Hypothesis 3; size does tend to impact the abnormal production of these privately held companies.

CONCLUSION

Private small companies have been the subject of much interest by accounting regulators recently. Pronouncement SSARS 19 (AICPA 2009) (Codified as AR 9080 and AR 9090) which was effective for compilations and reviewed statements prepared for periods ending on or after December 15, 2010, provided new guidance for compilations and reviews. In 2013, the AICPA issued the Financial Reporting Framework for Small- and Medium-Sized Entities (FRF for SMEs). FRF-MSEs followed the Financial Accounting Foundation's issuance of the *Blue Ribbon Panel Report on Standard Setting for Private Companies* in 2011. The Blue Ribbon Panel (BRP) Report noted that many private companies report financial information under some Other Comprehensive Basis of Accounting (OCBOA) than GAAP. Apparently, this study is the first study that compares reporting practices of companies whose financial statements are compiled and those that are reviewed.

My study is subject to several limitations. I only analyzed data from manufacturing companies because, due to data limitations, my study focused on inventory and production activities management and reporting. Earnings management patterns may differ in other ways between taxable and nontaxable small companies, and compiled and reviewed financial statements, in other industries. Kvaal et al. (2012) found differences in the real earnings management patterns of nonfamily-owned private companies and family-owned private companies. The Sageworks database did not provide any information on ownership of companies included in my sample. Future research could address these limitations.

Overall results indicate differences in abnormal production depending on whether financial statements have been reviewed or compiled by an independent accountant; reviewed companies tend to exhibit positive abnormal production while compiled companies tend to exhibit negative abnormal production. However, for the companies most likely to engage in earnings management (indicated by BENCH_i), only separately taxable reviewed entities tend to manage earnings higher to meet earnings benchmarks.

Contributions to Literature

This study extends previous research substantively. Only a few studies have examined financial information from large data sets of privately-owned small companies in the United States. This is the first study that examines reporting differences related to abnormal accruals between financial statements that are compiled and those that are reviewed. The results offer insights to users of reviewed and compiled statements about how different entities perhaps manage earnings through production and inventory decisions.

REFERENCES

- AICPA. (2004). *Statement on Standards for Accounting and Review Services (SSARS) No. 10, Performance of Review Engagements*.
- AICPA. (2009). *Review of Financial Statements*, AR Section 90, SSARS #19.
- AICPA. (2013). *Financial Reporting Framework for Small- and Medium-Sized Entities*. Available at: <http://www.aicpa.org/InterestAreas/FRC/AccountingFinancialReporting/PCFR/DownloadableDocuments/FRF-SME/FRF-SMEs-Framework.PDF>
- Allee, K. D., T. L. Yohn (2009). The Demand for Financial Statements in an Unregulated Environment: An Examination of the Production and Use of Financial Statements by Privately Held Small Businesses. *The Accounting Review*, 84(1), 1-25.

- Asker, J., J. Farre-Mensa, and A. Ljungqvist (2011). Comparing the Investment Behavior of Public and Private Firms. *Working Paper No. 17394*. National Bureau of Economic Research.
- Barefield, R. M., J. J. Gaver, and T. B. O'Keefe (1993). Additional evidence on the economics of attest: Extending results from the audit market to the market for compilations and reviews. *Auditing: A Journal of Theory & Practice*, 12(1), 76-87.
- Blackwell, D. W., T. R. Noland, and D. B. Winters (1998). The value of auditor assurance: Evidence from loan pricing. *Journal of Accounting Research*, 36(1), 57-70.
- Burton, E. J., and W. Hillison (1979). Big GAAP/Little GAAP: Is Accounting For Small Business In The Balance? *American Journal of Small Business*, 3(3), 16-24.
- Cheng, Q., and T. D. Warfield (2005). Equity Incentives and Earnings Management. *The Accounting Review* 80(2), 441-476.
- Chien, C.-C., C.-S. Young, and C.-W. Peng (2011). Does SFAS 151 Provide Perverse Incentive to Induce Manager's Over-production Behavior? At AAA National Meeting, Denver, CO, 2011: <http://centerforpbefr.rutgers.edu/2011PBFEAM/Download/AS/AS-22/2011PBFEAM-110.pdf>
- Cohen, D. A., A. Dey, and T. Z. (2008). Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *The Accounting Review*, 83(3), 757-787.
- Eldenburg, L. G., K. A. Gunny, K. W. Hee, and N. Soderstrom (2011). Earnings Management Using Real Activities: Evidence from Nonprofit Hospitals. *The Accounting Review*, 86(5), 1605-1630.
- Financial Accounting Foundation (2011). *Blue Ribbon Panel Report on Standard Setting for Private Companies*. Available at http://www.accountingfoundation.org/cs/ContentServer?site=Foundation&c=Document_C&pagename=Foundation%2FDocument_C%2FFAFDDocumentPage&cid=1176158181336
- Grusd, N. (2006). On Big GAAP Versus Little GAAP. *CPA Journal*, 76(8), 6-8.
- Gunny, K. A. (2010). The Relation Between Earnings Management Using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks. *Contemporary Accounting Research*, 27(3), 855-888.
- Hope, O.-K., W.B. Thomas, and D. Vyas (2013). Financial reporting quality of U.S. private and public firms. *The Accounting Review*, 88(5), 1715-1742.
- IRS (2013). *Table 6a. Examination Coverage, All Taxpayers, By Examination Class: Percentage of returns examined, all programs*, Available at <http://www.irs.gov/uac/SOI-Tax-Stats---IRS-Tax-Compliance-Activities>.
- IRS (2011). *SOI Tax Stats – Integrated Business Data – Table I*. Internal Revenue Service.
- Jo, H., and Y. Kim (2007). Disclosure Frequency and Earnings Management. *Journal of Financial Economics*, 84(2), 561-590.
- Kvaal, E., J. C. Langli, and J. J. Abdolmohammadi (2012). Earnings management priorities of private family firms. Available at: papers.ssrn.com/sol3/papers.cfm?abstract_id=1532824
- McConomy, B. J. (1998). Bias and accuracy of management earnings forecasts: An evaluation of the impact of auditing. *Contemporary Accounting Research*, 15(2), 167-195.
- Minnis, M. (2011). The Value of Financial Statement Verification in Debt Financing: Evidence from Private U.S. Firms. *Journal of Accounting Research*, 49(2), 457-506.
- Munter, P. and K. W. Tatum (1994). The implications of attestation risk on compilation and review engagements: A United States perspective. *International Journal of Management*, 11(3), 752.
- Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, 22(1), 435–80.
- Reinstein, A., B. P. Green, and C. L. Miller (2006). Evidence of Perceived Quality of "Plain-Paper Statements". *Auditing: A Journal of Theory & Practice*, 25(2), 85-94.
- Roychowdhury, S. (2006). Earnings Management through Real Activities Manipulation. *Journal of Accounting and Economics*, 42 (3), 335-370.
- Thomas, J. K., and H. Zhang (2002). Inventory Changes and Future Returns. *Review of Accounting Studies*, 7(2), 163-187.
- Thrower, A. (2010). Should it Be 'Big GAAP' or 'Little GAAP' For Private Companies? *Financial Executive* 26(2), 14-15.
- Wright, G. B., D. Fernandez, J. Burns, R. Hawkins, C. Hornsby, and S. Patel (2012). Big GAAP/Little GAAP: Will The Debate Ever End? *Journal of Business & Economics Research*, 10(5), 291-301.
- Zhao, Y., K. H. Chen, Y. Zhang, and M. Davis (2012). Takeover Protection and Managerial Myopia: Evidence from Real Earnings Management. *Journal of Accounting and Public Policy*, 31(1), 109-135.