THE EXISTENCE OF NONARTICULATION IN THE FINANCIAL STATEMENTS OF SAUDI COMPANIES

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ABSTRACT

Bahnson et al. (1996), Krishnan and Largay (2000), and Ward et al. (2006, 2009) identified a problem with financial reporting statements in the United States (US). This nonarticulation problem occurs when the actual reported net operating cash flow on the cash flow statement differs from the estimated operating cash flow obtained by applying the indirect method to the balance sheet and the income statement. Miller (2002) also confirmed that nonarticulation existed among Hong Kong companies.

This study tests whether nonarticulation exists in the financial statements of Saudi companies, and if it exists, can one reconcile the differences using footnote information. The results of this study also indicate that nonarticulation exists for the Saudi companies. However, when using the footnotes to supplement the published numbers, most of the nonarticulation can be explained and a significant amount of the nonarticulation eliminated. The ability to explain most of the nonarticulation using the footnotes is not consistent with prior research. This finding suggests that the Saudi companies' footnotes may either contain information more easily identifying missing items affecting operations or that the footnotes are more thorough than those of US companies.

INTRODUCTION

The issue of nonarticulation has been researched extensively in companies that follow United States (US) Financial Accounting Standards (FASB), otherwise known as Generally Accepted Accounting Principles (US GAAP). The purpose of this study is to determine if nonarticulation also exists in the financial statements of Saudi companies. Saudi companies use accounting standards accepted by the Saudi government. These standards are based on US FASB standards, UK accounting standards, and International Accounting Standards Board (IASB) standards and procedures (International GAAP).

Early cash flow literature (*e.g.*, Revsine, 1973; Lawson, 1978; 1985; Lee, 1972; 1978; 1981; 1985) suggested that cash flow information may be superior to accrual income information. The debate over cash flow reporting eventually produced a general consensus among financial statement users and researchers that published cash flow information is incrementally useful over accruals (e.g., Largay and Stickney, 1980; Lee, 1981; Sorter, 1982; Gombola and Ketz, 1983; Christie et al., 1984; Casey and Bartczak, 1984; 1985; Lawson, 1985; Bowen et al., 1986; 1987; Gombola et al., 1987). After much discussion and two exposure drafts (FASB 1981; 1986), the FASB subsequently addressed the issue of cash flow information and concluded that companies should publish a cash flow statement (FASB, 1987). Later, the IASB issued International

Accounting Standards 7 requiring companies adopting its standards to publish a Statement of Cash Flows (Whittington, 2005). Prior literature and research on the Statement of Cash Flows provided the motivation for subsequent studies on cash flow information that lead to the issue of nonarticulation.

Articulation, in the context of the financial statements, doesn't just suggest that the changes in one statement should be reflected in the others, but also means that these changes should flow through their proper classifications and be presented in the right places on the financial statements. In the context of cash flows, it is not sufficient to say that the net change in cash flows on the cash flows statement should equal the change in the cash balance on the balance sheet between the beginning and end of the period. Each of the three cash flows, cash flow from operating activities, cash flow from investing activities, and cash flow from financing activities, on the cash flow statement should represent the changes in the associated balances on the other statements. In the context of cash flow from operations, cash flow from operations should fully represent the change in cash that is associated with operating activities, nothing less or more. Thus, applying the indirect method of calculating operating cash flow using two balance sheets and the income statement should yield the exact same number as reported net cash flow from operating activities on the cash flow statement, at least in theory. Therefore, if the reported cash flow from operating activities differs from the estimated operation cash flow, then the financial statements do not fully articulate with each other, and what Bahnson et al. (1996) labelled as "nonarticulation" exists.

The remainder of the paper is organized as follows. We first discuss prior research. Next, we discuss the development of our hypotheses. Then, we discuss the sample and methodology of the study. Finally, we provide results from our analyses and offer our concluding remarks.

RELEVANT PRIOR LITERATURE

Bahnson et al. (1996) addressed this nonarticulation problem by collecting data from *Compustat* for 9,757 companies to determine whether the reported cash flow from operating activities (CFFO) materially differed from estimated operating cash flow (OCF). They defined major nonarticulation as differences that fall in the range of -3% to +3% from reported CFFO. Bahnson et al. found that 75% of the studied financial statements had material differences between the reported CFFO and the calculated OCF. Moreover, these differences in some cases exceeded 100% of the reported CFFO.

Bahnson et al. (1996) then identified a smaller sample of ten firms and conducted an in-depth analysis of the footnotes associated with the selected sets of financial statements to explore causes and find out explanations for the nonarticulation problems. Although they were able to find explanations for some of the differences between the reported CFFO and the estimated OCF, they concluded that it was not possible to identify all the factors that caused the nonarticulation problem. They also concluded that the Financial Accounting Standards Board (FASB) should require the direct method of reporting CFFO.

Ward et al. (2006) also found that large and significant differences existed between the reported CFFO and the calculated OCF in US companies. The interesting finding of Ward et al. (2006) is that the reported CFFO produces more useful information than the calculated OCF in predicting future financial distress, which implies that the reported CFFO is more reliable than the

calculated OCF. Thus, their results suggest that the causes of the nonarticulation are issues in the balance sheet and income statement, not issues with the cash flow statement. These findings explained why early cash flow studies did not find operating cash flow to be useful in predicting financial distress. The estimated cash flow variable has bias in the measure leads to overstating the health of distressed companies, thus weakening predictive regression modeling.

Krishnan and Largay (2000) subsequently investigated whether the gross cash flows reported using the direct method led to more accurate predictions of future operating cash flow. As part of their study, they also attempted to determine the amount of measurement error in (OCF) when compared to CFFO of the direct firms. Krishnan and Largay (2000) found that most direct-method companies reported relatively small differences between the two measures. However, some companies reported very large differences.

Ward et al. (2009) investigated whether companies using the direct method to present the Statement of Cash Flows showed the same amount of nonarticulation as companies that used the indirect method. The authors found that companies using the direct method produced articulated statements, while companies using the indirect method had significant amounts of nonarticulation in their financial statements.

Miller (2002) was the only published study the authors found that investigated the existence of nonarticulation in non-US companies using standards difference from FASB standards. Miller sampled Hong Kong companies. Hong Kong companies follow standards based on IFRS (Hong Kong Accounting Standards, 2016). Miller (2002) used a database of Hong Kong companies to determine if nonarticulation existed among these companies' statements. Then, Miller analyzed the financial reports of thirty-five companies to see if he could explain the differences causing the nonarticulation. Similar to Bahnson et al. (2006), Miller (2002) concluded that he could not explain many of the major differences causing the nonarticulation.

HYPOTHESES DEVELOPMENT

Most prior nonarticulation studies (Bahnson et al., 1996; Krishnan and Largay, 2000; Miller, 2002; Ward et al., 2006; 2009) used Standards and Poor's database, *Compustat*, to collect their data to create their models. These studies first took net income and then threw out all allocations and changes in current assets and current liabilities that affected earnings to estimate OCF of firms. The authors then compared OCF to CFFO. The difference between OCF and CFFO represents the amount of nonarticulation between the statements.

Except for Bahnson et al., (2006) and Miller (2002), prior studies ignored the footnotes and only used the information in the published numbers of the financial statements. Miller (2002) basically replicated Bahnson et al. using companies from Hong Kong. Similar to Bahnson et al. (2006), Miller (2002) found that many of the major differences between OCF and CFFO could not be explained. This finding suggests that nonarticulation may be a universal occurrence, and not restricted to US GAAP.

For the purpose of this paper, the authors attempt to replicate for Saudi firms the detailed analysis of statements and footnotes incorporated by the Bahnson et al. (2006) and Miller (2002) studies. We first investigate whether the published cash flow number can be derived from taking net income (before non-controlling interest) and adjusting it for allocations and operating timing

differences (does nonarticulation exist). Then, for all companies with nonarticulation the authors completed a full in-depth analysis of each company's balance sheets, income statement, and the associated notes to identify any items needed to adjust the estimated operating cash flow of each company. Each statement and each page of the associated notes were carefully studied in this process. The possible effect of the footnote information on OCF was analyzed. After studying and analyzing the information, OCF for each company was estimated again after considering the footnote information.

Typical to this type of study, the major limitation of the study involves the subjectivity of reading and interpreting financial footnotes. Personal interpretation and professional judgment are rarely error free, which is a limitation of this study. However, personal interpretation and professional judgment is also used in the coding of major databases and prior studies found any bias to be minimal. In addition, Saudi companies do not report their financial information in *Compustat*. Thus, the authors had to pull the information off the financial statements manually to calculate the relevant variables.

The rule making body in Saudi Arabia, the Saudi Organization of Certified Public Accountants (SOCPA), is a governmental organization. Thus, less flexibility exists for Saudi companies for changing allocation methods (SOCPA, 2016). Thus, Saudi companies do not follow International or US GAAP completely, but instead, follow Saudi government principles. SOCPA has more power and is less influenced by outside parties than the FASB. The head of SOCPA's board is the Minister of Trade and Industry who reports directly to the King of the country. Having more power allows SOCPA to impose more scrutinized laws and standards for reporting purposes. For example, SOCPA's inventory standard indicates that companies should use the weighted average method to evaluate inventory and continue using this method. Although exceptions to this requirement are allowed, they are rare. The use of IFRS is allowed in Saudi Arabia; however, it is seldom used as the only basis for GAAP. None of the companies included in this study use IRFS alone (It is worth mentioning that SOCPA is working on a project to converge to IFRS.)

The findings of prior studies (Bahnson et al., 1996; Krishnan and Largay, 2000; Miller, 2002; Ward et al., 2006; 2009) constitute the motivation for this study, especially the severity of the nonarticulation problem in US companies. Because there are more resemblances than differences between US and the Saudi rules of reporting and disclosure, it is appropriate to assume that the level of nonarticulation found in Saudi companies would be similar to the nonarticulation level in US companies. Thus, this study tests the following hypotheses stated in null form:

H_1: significant nonarticulation exists between the financial statements of the Saudi companies.

H_2: adjusting the reported numbers on the statements using the footnotes does not significantly improve articulation for the Saudi firms' financial statements.

SAMPLE AND RESEARCH DESIGN

The original population of firms consisted of the 2014 financial statements of all publicly traded Saudi companies. Currently, there are 171 registered companies in the Saudi stock

exchange market (Tadawul, 2016). These publicly traded companies are divided into 15 different industries. Tadawul flags companies that experience substantial losses or are suspended from the market. Currently, there are nine flagged companies as shown in Table 1.

Table 1
Saudi Companies that Experienced Substantial Losses or were Suspended from the Market

Industry	No. of companies	No. of flagged companies
Banks & Financial Services	12	0
Petrochemical Industries	14	0
Cement	14	0
Retail	15	0
Energy & Utilities	2	0
Agriculture & Food Industries	16	2
Telecommunication & Information Technology	4	1
Insurance	35	4
Multi-Investment	7	1
Industrial Investment	15	0
Building & Construction	17	1
Real Estate Development	8	0
Transport	5	0
Media and Publishing	3	0
Hotel & Tourism	4	0
TOTAL	**171**	**9**

All flagged companies were excluded. Similar to previous studies using US companies, the authors excluded Banks & Financial Serveries and Insurance companies. Then, the authors randomly selected thirty companies from the Tadawul website. The 2014 financial statements along with associated notes of these thirty companies comprised the data used to calculate the variables for this study. All thirty companies used the indirect method of preparing the Statement of Cash Flows. Table 2 contains the final sample of Saudi firms.

For the purpose of this study, a sample of thirty companies was deemed appropriate. All numbers in this study had to be calculated by hand using the published financial statements. In addition, the authors had to analyze all the footnotes in the financial statements, determine information that would impact operations, and recalculate OCF for each relevant item.

In their analyses of companies' footnotes to reconstruct OCF both Bahnson et al. (1996) and Miller (2002) used similar sample sizes. Bahnson et al. (1996) used ten firms, while Miller (2002) used thirty-five firms. Although a small sample size is inherently a limitation of studies such as these, the authors felt that thirty firms were sufficient and appropriate for this study.

Table 2
Sample of Saudi Firms Selected.

Company's name	Industry
National Gypsum Co.	Building & Construction
Saudi Vitrified Clay Pipes Co.	Building & Construction
Anaam International Holding Group	Agriculture & Food Industries
Saudi Industrial Export Co.	Industrial Investment
United Electronics Co.	Building & Construction
Saudi Arabia Refineries Co.	Multi-Investment
United Wire Factories Co.	Building & Construction
Saudi Automotive Services Co.	Retail
Knowledge Economic City.	Real Estate Development
Herfy Food Services Co.	Agriculture & Food Industries
The Savola Group	Agriculture & Food Industries
Othaim Markets	Retail
Zoujaj Glass	Industrial Investment
Al Hokair Group	Hotel & Tourism
Astra Industrial Group	Industrial Investment
Yanbu Cement Co.	Cement
Al Ahsa Development Co.	Multi-Investment
Saudi Arabian Fertilizer Co.	Petrochemical Industries
Red Sea HousingCo.	Building & Construction
Al Sorayai Group	Industrial Investment
Saudi Pharmaceutical & Medical App. Co.	Industrial Investment
Electrical Industries Co.	Building & Construction
National Gas & Industerialization Co.	Energy & Utilities
Al Marai Co.	Agriculture & Food Industries
Tourism Enterprises Co.	Hotel & Tourism
Bawan Co.	Building & Construction
Dallah Healthcare Holding Co.	Retail
Saudi Paper Manufacturing Co.	Industrial Investment
Al Abdullatif Industrial Investment Co.	Industrial Investment
Fitaihi Holding Group	Retail

The two cash flow variables of interest are estimated operating cash flow (OCF) and cash flow from operating activities (CFFO) as reported on the Statement of Cash Flows.

To estimate operating cash flow (OCF), similar to previous studies, the following formula was applied to the information found in the financial statements:

OCF = NI + (CAb-CASHb) - (CAe - CASHe) - (CLb - DEBTb) + (CLe – DEBTe) + DEP + AMORT – OTHERGAIN + OTHERLOSS,

where NI = net income (before non-controlling interest), CA = current assets, CASH = cash, CL = current liabilities, DEBT = all loans, DEP = depreciation, AMORT = amortization, OTHERGAIN = all other gains, OTHERLOSS = all other losses, b = beginning of the period, and e = end of the period (one company in the sample reported an extraordinary item).

The primary variable of interest is DIFF, the difference between OCF and CFFO calculated as OCF - CFFO.

RESULTS AND DISCUSSIONS

Using only the published information on the financial statements, the authors calculated the estimated operating cash flow, OCF, and identified the reported operating cash flow, CFFO. Then, the difference between the two numbers was calculated (DIFF). DIFF represents the amount of nonarticulation in the financial statements. We scaled DIFF by both total assets (Ward et al., 2006; 2009) and CFFO (Bahnson et al., 1996). Because CFFO can be positive or negative, Ward et al. (2006) cautioned against scaling the difference by CFFO, as the results could be misleading. For comparison purposes, we use both total assets and CFFO as scaling measures. Table 3 contains the percentage differences for each firm.

The results for DIFF were similar to those reported in prior studies. The raw numbers suggest substantial nonarticulation among the companies for both scaling measures. A few of the differences were extreme with Knowledge Economic City having a difference exceeding 19% when scaled by total assets and over 2,000% when scaled by reported operating cash flow (CFFO). Using the same 3% level of significance as Bahnson et al. (1996), 23 of the 30 companies (76.6%) had differences exceeding three percent of CFFO, when scaled by CFFO as Bahnson et al. (1996) did. When using total assets as the scaling measure, seven of the 30 companies had differences exceeding three percent of total assets.

Table 3
The Difference between OCF and CFFO Scaled by Total Assets and CFFO: Unadjusted Using Only Financial Statement Information.

Name of Company	DIFF Scaled by Total Assets	DIFF Scaled by CFFO
National Gypsum Co.	4.00%	68.07%
Saudi Vitrified Clay Pipes Co.	-0.37%	-1.57%
Anaam International Holding Group.	21.77%	140.00%
Saudi Industrial Export Co.	-1.32%	-15.84%
United Electronics Co.	-4.28%	-22.55%
Saudi Arabia Refineries Co.	0.12%	4.34%
United Wire Factories Co.	0.23%	1.05%
Saudi Automotive Services Co.	-1.22%	-66.64%
Knowledge Economic City.	-19.49%	-2089.00%
Herfy Food Services Co.	-1.26%	-5.43%
The Savola Group	-1.49%	-18.58%
Othaim Markets	-0.23%	-1.43%
Zoujaj Glass	-2.22%	-33.19%
Al Hokair Group	-0.28%	-1.23%
Astra Industrial Group	0.55%	9.82%
Yanbu Cement Company	-0.30%	-1.37%
Al Ahsa Development	29.57%	-1061
Saudi Arabian Fertilizer Company	-0.25%	-0.71%
Red Sea Housing	-0.90%	-8.16%
Al Sorayai Group	-1.11%	-17.24%
Saudi Pharm & Medical Corporation	1.92%	185%
Electrical Industries Company	-8.35%	-29.14%
National Gas & Industerialization Co.	-1.23%	-6.97%
Al Marai	-0.92%	-6.88%
Tourism Enterprises Co.	-0.71%	-14.15%
Bawan Co.	-1.12%	-12.48%
Dallah Healthcare Holding Company	4.55%	50.92%
Saudi Paper Manufacturing Company	2.85%	38.16%
Al Abdullatif Industrial Investment Company	0.25%	2.07%
Fitaihi Holding Group	1.47%	20.60%
Number of companies with differences > +-3%	**7**	**23**

To supplement the reported numbers, the authors next recalculated OCF after reviewing the footnotes, to look for supplemental information that would help identify items that should, or should not, go in the operating section of the Statement of Cash Flows. The recalculated amounts for DIFF after relevant adjustments are shown in Table 4. These results show substantial

improvement in articulation after adjusting the numbers for the footnoted information. For example, the articulation for Knowledge Economic City improved tremendously; the difference is now only .12% of total assets and 3.08% of CFFO. After adjusting for footnoted information nine companies (30%) have differences greater than three percent when scaled by CFFO, while only one of the companies have differences greater than three percent when scaled by total assets.

Table 4
The Difference between OCF and CFFO Scaled by Total Assets and CFFO: Adjusted for Footnote Information

Name of Company	DIFF Scaled by Total Assets	DIFF Scaled by CFFO
National Gypsum Co.	0.12%	1.97%
Saudi Vitrified Clay Pipes Co.	-0.16%	-0.68%
Anaam International Holding Group.	4.52%	28.95%
Saudi Industrial Export Co.	-0.75%	-3.06%
United Electronics Co.	-0.54%	-2.71%
Saudi Arabia Refineries Co.	0.09%	3.23%
United Wire Factories Co.	0.51%	2.34%
Saudi Automotive Services Co.	-0.02%	-1.03%
Knowledge Economic City.	-0.12%	-3.08%
Herfy Food Services Co.	0.02%	0.09%
The Savola Group	-0.05%	-0.63%
Othaim Markets	0.03%	0.22%
Zoujaj Glass	0.00%	0.00%
Al Hokair Group	0.00%	-0.02%
Astra Industrial Group	0.49%	8.65%
Yanbu Cement Company	0.22%	1.01%
Al Ahsa Development	1.73%	62.08%
Saudi Arabian Fertilizer Company	0.08%	0.23%
Red Sea Housing	-0.31%	-2.83%
Al Sorayai Group	0.05%	0.83%
Saudi Pharm & Medical Corporation	1.69%	163%
Electrical Industries Company	-0.81%	-2.84%
National Gas & Industerialization Co.	0.23%	1.30%
Al Marai	-0.14%	-1.07%
Tourism Enterprises Co.	0.00%	0.00%
Bawan Co.	-0.62%	-6.86%
Dallah Healthcare Holding Company	0.08%	0.94%
Saudi Paper Manufacturing Company	0.83%	11.07%
Al Abdullatif Industrial Investment Company	-0.02%	-0.17%
Fitaihi Holding Group	0.00%	0.04%
Number of companies with differences > +-3%	**1**	**9**

Generally, there are more similarities than differences between US accounting standards and Saudi accounting standards. However, the authors identified over twenty differences between US GAAP and Saudi GAAP for the firms in our sample.

Some of the major differences in the calculations that explain why the footnotes help in adjusting the numbers to more appropriate amounts centered on pension reporting, interest reporting, and the use of aggregation. One major difference relates to pension accounting. Saudi companies do not have a pension standard and call it 'end of service' instead of pension expense. All of the companies recorded the unpaid part of the end of service (pension) expense as a long-term liability. Thus, the pension expense would not show up in OCF, estimating the number.

Saudi companies are inconsistent in the treatment of interest expense. Some companies call interest expense financial burdens, others call them financing costs, while some companies call them financial expenses. Thus, some companies treat interest expense as an operating item, while others do not.

Another important reason for the differences between CFFO and OCF is the aggregation level on the balance sheet. There are so many accounts aggregated under one category that distinguishing between operating and non-operating activities is difficult. Although these aggregations might be immaterial when considered separately, the accumulated effect of all of the aggregations can greatly impact the calculation of OCF, leading to high levels of nonarticulation.

Another interesting finding is that companies investing heavily in other activities than their main operations have significantly more nonarticulation. Companies focusing mostly on their operations that do not have other income, and expenses tend to have a very high level of articulation regardless of the size of the company or the method used to calculate operating cash flow. Finally, combinations, acquisitions, and disposals of businesses also appear to have an impact on the level of nonarticulation.

The results of the unadjusted numbers in this study do appear consistent with the findings of Bahnson et al. (1996) and Miller (2002). However, to test our hypothesis we need to determine if the nonarticulation is significantly material. The absolute value of DIFF for each company was summed and a t-test for significance from zero was calculated in both situations. The authors used the absolute value because, in this study, we are only interested in the amount of nonarticulation, not the direction of the difference. In addition, Ward et al. (2006; 2009) cautioned against using CFFO as the scaling measure because it can be negative or positive; dividing by a negative number can produce inconsistent scaling results. By using the absolute value, we are able to eliminate this scaling problem. The test results are reported in table 5.

Table 5 contains the means for DIFF, t-test statistics, and p-values for testing DIFF calculated before and after considering the impact of footnote information. Because H_1 is a two-tailed test of differences with no direction assumed, one must use a Tukey two-way adjusted when interpreting levels of significance. Thus, the results reported in Table 5 have been adjusted for the two-way assumption.

The t – test results show that significant nonarticulation exists when the difference (DIFF) is scaled by total assets (t statistic = 2.83, p-value <.016). The nonarticulation is still significant,

even after adjusting for the additional footnoted information (t statistic = 2.63, p-value < .026). However, the results differ when difference is scaled by CFFO; the results are never significant, not for the published information only or for the footnote-adjusted information (t statistics of 1.03 and 1.82, p-values < .624 and < .158, respectively). This result may appear counterintuitive based on the results reported in Table 4 showing that the differences were greater when scaled by CFFO. However, the variances in the results when scaling by CFFO were much greater than when scaling by total assets, thus resulting in much smaller test statistics. And, as explained earlier, scaling DIFF by CFFO adds additional noise to the nonarticulation measure.

Thus, H1 is partially, but not completely, accepted. Significant nonarticulation exists for the Saudi companies if the difference is scaled by total assets. However, the difference is not significant when scaled by CFFO.

Table 5
Tests of Differences (DIFF): Published Unadjusted Information and Footnote Adjusted Information

Scaled by total assets:

Sample	Means for DIFF	Standard Deviations	t Statistic	Prob > t
Published Information (n = 30)	0.0370	0.0715	2.83	0.016
Footnote Adjusted (n = 30)	0.0050	0.0104	2.63	0.026

Scaled by CFFO:

Sample	Means for DIFF	Standard Deviations	t Statistic	Prob > t
Published Information (n = 30)	36.3200	193.3240	1.03	0.624
Footnote Adjusted (n = 30)	0.1037	0.3126	1.82	0.158

To test H_2, whether adjusting the reported numbers using the footnotes significantly improved articulation, the two DIFF measures (DIFF calculated using the published information only and DIFF calculated adjusting the published information for footnote information) were calculated for each measure. Because of the small sample sizes, we calculated the Folded F test of equal variances for the two groups compared to see if a t – test of difference between the two measures would be appropriate. In all comparisons, the Folded F - test Statistic was significant at p – values less than .001, thus indicating that the variances from the two groups were not equal. Significant Folded F – test Statistics suggest that parametric tests such as the t – test would not be appropriate for this comparison, and could produce biased results. Thus, for our sample, a non-parametric statistic is a more reliable test of significance. As a result, we used the non-parametric Wilcoxon Test of Z approximation for each comparison test (Bhattacharyya and Johnson, 1977). The results for the comparison tests are reported in Table 6.

The results for the comparison tests show that adjusting the reported numbers for footnoted information significantly improved articulation in all cases, even when the difference is scaled by

CFFO (p – values < .0001 in all cases). Thus, using the footnotes significantly improves articulation, even when using the weaker scaling measure of CFFO. So, H_2 is rejected. Using the footnotes for the Saudi companies does result in significantly improved articulated numbers. This result is contrary to the findings of Bahnson et al. (1996) and Miller (2002).

The results of this study suggest that nonarticulation issues also affect Saudi firms. However, the Saudi companies may provide more detailed footnote information than US companies. By adjusting the numbers on the financial statements using footnote information, one is able to significantly improve articulation. Failure to adjust the published numbers in the statements for the footnote information would result in similar nonarticulation issues as found in US companies.

Table 6
Non-parametric Wilcoxon Test of Amount of Difference in Nonarticulation between Statement Information and Footnote Supplemented Information

Non-parametric Wilcoxon Test:		
Variable	**z approximation**	**Prob > z**
DIFF Scaled by TA (n = 30)	3.41	0.0003
DIFF Scaled by CFFO (n = 30)	4.00	0.0001

Thus, our results using footnote information contradict Bahnson et al. (1996) and Miller (2002) somewhat. Bahnson et (2002) were not able to explain the nonarticulation issues using footnoted information. For the Saudi companies in this study, the footnote information was sufficient to explain a significant amount of the nonarticulation.

CONCLUSION

The results of this study suggest that the occurrence of nonarticulation in Saudi companies does exist, especially if one scales the difference by total assets. When taking into consideration only the published financial numbers from the financial statements the Saudi companies produced nonarticulation levels similar to those reported for US companies in prior research. Trying to estimate the operating cash flow without carefully studying the financial statements and the associated notes is still not sufficient for Saudi companies.

However, if one is careful to incorporate footnote information into the financial numbers from the financial statements, then the differences decrease significantly, resulting in significantly better articulation. Thus, the results of our analyses for the Saudi companies suggest differences from Bahnson et al. (1996) and Miller (2002) for the footnoted information. Unlike Bahnson et al. (1996) and Miller (2002), adjusting operating results for relevant footnoted information significantly improved articulation (significantly decreased the difference between reported operating cash flow and estimated operating cash flow).

The different findings of this study are interesting and add to the previous literature on nonarticulation. Our findings would seem to suggest that the footnote requirement differences

between the different country's standards of reporting result in less nonarticulation among the Saudi companies. Thus, investors in the Saudi Arabia market are making decisions with more articulated statements than investors in the US and Hong Kong markets.

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