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Are financial professionals ready for IFRS?: An exploratory study

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ABSTRACT

Despite a move towards convergence between principles-based International Financial Reporting Standards (IFRS) and rules-based U.S. GAAP, and the likelihood that many foreign affiliates of U.S. firms use IFRS, little research has examined whether United States financial managers appropriately record and summarize transactions in accordance with IFRS. This paper investigates the ability of 176 U.S. financial managers to appropriately apply the revenue recognition standard under IFRS when given the relevant guidance. About half of the participants selected the U.S. GAAP answer, and only 40 percent identified the correct answer under IFRS. More experienced financial managers, and financial managers with relevant industry experience were more likely to appropriately apply the standard, but a substantial percentage of them still selected the GAAP choice rather than the correct choice under IFRS. This suggests that more IFRS training in the U.S. is needed prior to IFRS adoption.

1. Introduction

Although the Securities and Exchange Commission (SEC) remains committed to International Financial Reporting Standards (IFRS) convergence, little research has examined whether United States (U.S.) financial managers can appropriately record and summarize transactions in accordance with principles-based standards (e.g., IFRS).[4] IFRS differs significantly from U.S. Generally Accepted Accounting Principles (GAAP), because it is a principles-based approach as compared to rules-based GAAP standards.[5] Although the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) have pledged to develop new financial accounting standards together and work towards harmonization, there are a number of important areas where significant differences remain.

This study examines whether financial managers can apply IFRS (principles-based) standards in a relatively straight-forward setting when all necessary standard information has been summarized. Given the fact that the U.S. will potentially be converting to IFRS, and some U.S. companies already have subsidiaries domiciled in a country that mandates IFRS (Hansen, 2004), it is important to gain an understanding of whether financial managers are appropriately applying IFRS. Numerous studies have been conducted involving IFRS (Cohen, Krishnamoorthy, Peytcheva, & Wright, 2013; Collins, Pasewark, & Riley, 2012; Daske, 2006; Henry, Lin, & Yang, 2009; Jamal & Tan, 2010; Segovia, Arnold, & Sutton, 2009); however, few have addressed the applicability of these principles-based standards by practitioners, despite the fact that companies may be slow to offer training and support for IFRS until they are required to do so (PricewaterhouseCoopers, 2011). Moreover, the American Accounting Association's Financial Accounting Standards Committee felt that the SEC premise of IFRS delivering consistency and comparability in financial reporting is false and misleading (Jamal et al., 2010).

This paper contributes to existing research by examining if practitioners are appropriately applying principles-based standards. Prior research has stated that IFRS has not been communicated accurately (Nelson, 2003). To improve this communication and to examine the applicability of principles-based standards we use an actual IFRS, IAS 18 Revenue.[6] Revenue recognition was the focus of this study because

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[4] The term “financial managers” is consistent with prior literature (Jamal & Tan, 2010; McCarthy & McCarthy, 2014). Although some (about 25%) of the participants in this study are less experienced on average than those used in prior research, the statistical significance of the results are similar when the less experienced participants are excluded.
[5] The principles-based approach allows or requires the exercise of professional judgment where the rules-based approach follows more of a “check-box” or compliance approach (Schipper, 2003).
[6] It should be noted that this study utilizes the revenue recognition standard prior to the current standard (issued May 28, 2014, ASU 2014–9, *Revenue from Contracts with Customers, Topic 606*). The new standard, yet to be implemented, is almost identical for U.S. GAAP and IFRS. The deadline for implementation is January 1, 2017 (Balbi, 2014; Tysiac, 2014; Tysiac & Murphy, 2015). The revenue recognition standards at the time this study was executed were inconsistent between U.S. GAAP and IFRS. Although the standard has since been updated, this study is still a relevant examination of whether U.S. financial managers are capable of applying principles-based guidance, which requires significant judgment.

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it is a major area where IFRS and GAAP had significant differences; as well as one of the critical areas under both frameworks. For example, revenue receives a great deal of focus from the investor and analyst communities since it may require subjective judgments on the part of management. Revenue is also an area where financial statement fraud is often committed. Many U.S. corporations have been slow to adopt IFRS, so before the convergence to IFRS becomes official (PricewaterhouseCoopers, 2011) it is important to investigate how knowledgeable U.S. financial managers are about IFRS in an important, complex, and risky area of the financial statements (i.e., revenue recognition).

This is also an important and interesting issue on the regulator's radar, because in 2007 the SEC proposed a rule to eliminate the reconciliation of U.S. GAAP to IFRS and asked "Should the timing of our acceptance of IFRS as published by the IASB without a U.S. GAAP reconciliation depend upon foreign issuers, audit firms and other constituencies having more experience with preparing IFRS financial statements?" (SEC, 2007). The rule became final and effective March 4, 2008 for financial statement years ending after November 15, 2007 (SEC, 2008).

This paper extends prior research examining IFRS principles-based standards and provides evidence that U.S. financial managers are not only inappropriately applying a principles-based standard (IAS 18: Revenue), but resorting back to U.S. GAAP rules, despite being provided with the appropriate IFRS revenue recognition guidance. At a national training session 176 U.S. financial managers were provided with the relevant IFRS literature and asked to make a revenue recognition judgment.[7] Despite the fact that 85% of the participants were CPAs, the majority of participants did not select the appropriate application of revenue recognition under the principles-based standard (IFRS) and frequently chose the application consistent with rules-based (U.S. GAAP), even though they were asked to apply the IFRS standard. More experienced participants and participants with relevant industry experience were more likely to apply the appropriate treatment, but a substantial percentage of them still selected the GAAP treatment rather than the appropriate treatment under IFRS.

Based on these results, it appears that greater effort to prepare U.S. financial managers for IFRS is needed. In addition, lack of preparedness of U.S. financial managers for IFRS may increase the risk of a material revenue recognition error. Given efforts towards convergence by international standards setters, and the prevalence of multinational firms with either a parent or subsidiary company that uses IFRS, more training and education of U.S. students, accountants, and professionals with significant financial responsibilities are warranted.

2. Background and literature review

2.1. IFRS convergence

With the principles-based conceptual framework of IFRS being markedly different than the rules-based framework of U.S. GAAP, it is important that prior to implementation practitioners receive proper training so that IFRS is uniformly applied (Hail, Leuz, & Wysocki, 2010; Spieker, 2008). The more important issue surrounding the need for proper training is due to the significant difference in how transactions are recorded and summarized in the financial statements (i.e. lease accounting, revenue recognition, and increased level of subjectivity/judgment with IFRS). While efforts are in place to train practicing accountants, educators, and students on IFRS, there is little research that examines how U.S. financial managers apply these international standards. Although many U.S. financial managers view IFRS convergence as inevitable, many U.S. companies have taken a "wait and see" approach to preparing for IFRS (PricewaterhouseCoopers, 2011).

2.2. IFRS research studies

The adoption of IFRS by the U.S. has been a pending issue for several years and, while it seems the U.S. is getting closer to this becoming a reality; research involving practitioners in this area is limited. Numerous studies have been conducted involving IFRS (e.g. Cohen et al., 2013, Collins et al., 2012, Daske, 2006, Henry et al., 2009, Jamal & Tan, 2010, Segovia et al., 2009); however, it seems few have addressed the understandability and applicability of these principles-based standards by practitioners, and only two, Jamal and Tan (2010) and Agoglia, Doupnik, and Tsakumis (2011) used U.S. financial professionals as participants.[8]

With the movement in financial reporting towards more principles-based standards, exercising professional judgment is extremely important. However, few studies have analyzed judgment and decision-making with regard to IFRS (Backof, Bamber, & Carpenter, 2012; Bailey & Sawers, 2012). Backof et al. (2012) examine U.S. GAAP verses IFRS regarding leases and concludes auditors are more apt to accept the client's preference for classifying leases and less apt to accept the client's preference for recognizing revenue under IFRS.

2.3. Revenue recognition

Revenue recognition receives a great deal of focus from the investor and analyst communities, and professionals are under significant pressure to show constant revenue growth. Revenue recognition is also a very complex area, which can lead to misinterpretations by professionals who may not always have accounting or finance knowledge. Revenue recognition requires subjective judgments on the part of management, leading to biased judgments in some cases. It is also an area where financial statement fraud is often committed.

Revenue recognition is one of the larger projects in the IFRS-U.S. GAAP convergence efforts (Colson et al., 2010; Lamoreaux & Nilsen, 2010).[9] Revenue recognition in U.S. GAAP differs from the IFRS recognition principles. While revenue is defined and measured similarly under both U.S. GAAP and IFRS, the recognition of revenue differs (Sedki, Smith, & Strickland, 2014). Under IFRS, revenue is recognized after meeting the following conditions: (1) the amount of revenue and costs associated with the transaction can be measured reliably; (2) it is probable that the economic benefits associated with the transaction will flow to the seller; (3) the seller has transferred to the buyer the risks and rewards of ownership and doesn't effectively manage or control the goods; and (4) the stage of completion can be measured reliably.[10] In our current global environment, it is important that preparers and users of financial statements have an understanding of how to apply IFRS revenue recognition standards. Refer to Appendix 1 for some general differences and similarities of revenue recognition between U.S. GAAP and IFRS, which are relevant to this study and the convergence and implementation of the new revenue standard.

Given some of the important differences between U.S. GAAP and IFRS with regard to revenue recognition, which are primarily the need to exercise more professional judgment and follow principles-based guidance, we examine two research questions. To help us assess the

[7] The national training session was not specific to IFRS.

[8] Although the current study and most of the previous studies focus on the U.S., other recent studies have focused on emerging markets, such as Malaysia and Greece. These studies have found higher quality of reporting earnings after IFRS (Ballas, Skoutela, & Tzovas, 2010; Ismail, Anuar, Van Zijl, & Dunstan, 2013).

[9] These projects include a FASB and IASB joint project on revenue recognition which resulted in a converged, principles-based standard on revenue recognition (released May 2014); however, implementation may be delayed. The new standard requires significant professional judgment, and supersedes most existing U.S. GAAP and IFRS guidance on revenue recognition.

[10] IAS No. 18.

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Table 1
Revenue recognition response by job level.

Job level	Participants		Average years of experience	Revenue recognition response					
	N	%		U.S. GAAP		IFRS		Other	
				N	%	N	%	N	%
Entry Level Staff	3	1.7%	2.00	3	100%	0	0%	0	0%
Senior Level Staff	32	18.2%	3.69	16	50.0%	13	40.6%	3	9.4%
Junior Manager	13	7.4%	3.85	11	84.6%	0	0.0%	2	15.4%
Manager	35	19.9%	4.57	14	40.0%	14	40.0%	7	20.0%
Senior Manager	29	16.5%	4.86	17	58.6%	12	41.4%	0	0.0%
Director or above	54	30.7%	5.11	18	33.3%	28	52.0%	8	14.8%
No level indicated	10	5.6%	1.30	6	60.0%	3	30.0%	1	10.0%
Overall totals	176	100.0%	4.34	85	48.3%	70	39.8%	21	11.9%

applicability of principles-based standards we pose the following research question:

RQ1. Will U.S. financial managers be able to appropriately apply the correct amount of revenue to be recognized when given the relevant principles-based international accounting standard?

There is a body of research that has examined the expertise of accounting practitioners while performing accounting tasks where certain variables will be helpful in learning any task (Frederick, 1991; Libby & Luft, 1993). Experience has been commonly used as a measure of expertise and to our knowledge there has not been any research that has examined the dimensions of expertise for principles-based IFRS. To help us examine some of the dimensions of expertise for a principles-based standard we pose the following research question:

RQ2. Does financial managers' experience increase their ability to identify and apply the correct amount of revenue to be recognized using a principles-based standard?

3. Methodology

3.1. Task

Data was collected from 176 experienced U.S. financial managers from a wide variety of companies at a national training session on financial accounting topics. The majority of the participants (85%) was CPA's. Participants were given revenue recognition scenario, the relevant IFRS (principles-based) guidance, and then asked to choose the correct application of the IFRS revenue recognition criteria from one of six choices: recognize all revenue up front, the U.S. GAAP method, the IFRS method (straight-line), defer all revenue, need more information, or other.[11] The scenario involved revenue recognition of fees and royalties in a multi-element context involving the sale of software and post contract support.[12] Participants also filled out demographic information on their work experience, industry experience, current job position and title, and any relevant certifications.

3.2. Participants

The participants in this study averaged (standard deviation) 4.34 (4.52) years of experience as a financial manager. As shown in Table 1, the most common job level was director (30.7%), followed by manager (19.9%), senior level staff (18.2%), senior manager (16.5%), junior manager (7.4%), and entry-level staff (1.7%). Ten (5.6%) participants did not indicate a job level and of those ten only three indicated years of experience (two, five, and six years). Most of them described their job function as either accounting (58.0%) or finance (28.4%).

Refer to Table 2 for industry experience demographics and revenue recognition response. The industries which were represented the most in the sample were retail (14.2%), consumer products (11.4%), power and utilities (9.7%), and banking and securities (8.0%). Collectively, participants representing the top four industries selected the appropriate treatment of revenue only 34.2% of the time. Participants from the following industries selected the appropriate revenue recognition response most were process and industrial products (83%), media and entertainment (75%), Technology (67%), and Consulting (67%). Participants in the banking and securities (14%) and transportation/logistics (25%) industries selected the IFRS response the least compared to the participants in other industries. Since the task involved the sale of software and post contract support, it appears financial managers in the technology field may have had an advantage compared to managers in some of the other industries.

4. Results

Overall the revenue recognition answer under U.S. GAAP (incorrect response) was selected by 48.3% of the participants, making it the most frequently chosen answer. It has been suggested that along with basic technical skills and knowledge of individual areas, more advanced skills and experience are necessary to understand IFRS in entirety and appropriately apply recognition and measurement (Rózsa, 2013). Also, Chen and Sami (2013) show that the trading volume reaction to the earnings reconciliation from IFRS to U.S. GAAP is driven by first-time IFRS users with low institutional ownership, suggesting the importance of investor experience on understanding IFRS-based financial statements without reconciliation. Based on the need for advanced skills and experience, we categorized the participants into two current job position levels: director level (30.7%) and non-director level (69.3%). An independent samples two tailed t-test was run to comparing the group's means and non-director level participants selected the U.S. GAAP answer (0.545) significantly ($p = 0.007$) more often than the director level participants (0.333).[13] The correct answer under IFRS (straight line revenue recognition) was selected by 39.8% of the participants, with the remaining participants (11.9%) selecting one of the other two incorrect choices (recognize full amount of revenue immediately or defer all revenues). Another independent sample two tailed t-test was run to determine whether the group mean's regarding

[11] At the time of distribution, the relevant IFRS revenue recognition standards were provided for guidance.

[12] Half of the participants were given a judgment framework developed by an audit partner aimed at reducing common judgment biases such as confirmation bias. The framework did not affect whether participants correctly applied IFRS at conventionally significant levels.

[13] A cross-tabulation analysis (2×2 table) was also performed to further analyze U.S. GAAP as a response between non-director and director levels. The proportion of directors who responded with the U.S. GAAP option is significantly different ($p = 0.013$) than the non-director level. Also, both Phi and Cramer's V measures support this significant ($p = 0.008$) difference between level groups.

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Table 2
Revenue recognition response by industry.

Industry	Participants		Revenue recognition response		
	N	%	U.S. GAAP	IFRS	Other
Another industry	40	22.7	16	15	9
Retail	25	14.2	15	10	–
Consumer products	20	11.4	10	8	2
Power & utilities	17	9.7	8	6	3
Banking & securities	14	8.0	9	2	3
No participant response	8	4.6	2	–	6
Real estate	7	4.0	4	3	–
Telecommunications	7	4.0	4	3	–
Process & industrial products	6	3.4	1	5	–
Technology	6	3.4	–	4	2
Insurance	5	2.8	3	2	–
Health sciences	4	2.3	2	2	–
Media & entertainment	4	2.3	1	3	–
Tourism/hospitality/leisure	4	2.2	2	2	–
Transportation/logistic	4	2.2	3	1	–
Consulting	3	1.7	1	2	–
Automotive	2	1.1	–	1	1
Total	176	100.0	81	69	26

responding with the correct IFRS answer were significantly different.[14] Results support that non-director level participants answered IFRS (0.348) significantly less often ($p = 0.034$) than the director level participants (0.519).[15] Refer to Table 3 for descriptive statistics, grouped by level (non-director or director).

Only 34.8% of non-director level participants responded correctly versus 51.9% of the director level participants. A possible reason for this is that non-director level participants may need more support with IFRS guidance. However, despite being given the relevant guidance under IFRS, many participants, in both the non-director level (65.2%) and director level groupings (48.1%), selected the wrong answer, with more selecting the U.S. GAAP than the IFRS answer (Table 3). Therefore, even director level participants often appeared to lack clarity between IFRS and U.S. GAAP.[16]

4.1. Correlations

Since this is intended to be an exploratory study, and descriptive in nature, we also tested if dimensions of expertise (i.e., experience) and other demographic variables were correlated with participants' revenue recognition choices. The correlation matrix can be found in Table 4.

The participants in the director level group were positively correlated with recognizing revenue appropriately under the IFRS standard (0.164, $p = 0.029$), and negatively correlated with applying the inappropriate U.S. GAAP application (−0.199, $p = 0.008$). Alternatively, the non-director level group of participants was positively correlated with the incorrect U.S. GAAP application (0.199, $p = 0.008$), and

Table 3
Revenue recognition response by experience grouping.

Level	N	IFRS	U.S. GAAP	Other
Revenue recognition — number of responses				
Director level	54	28	18	8
Non-director level	112	39	61	12
No level indicated	10	3	6	1
Totals	176	70	85	21
Revenue recognition — % of responses				
Directors and above	30.7%	51.9%	33.3%	14.8%
Non-directors	63.6%	34.8%	54.5%	10.7%
No level indicated	5.7%	30.0%	60.0%	10.0%
Totals	100.0%	39.8%	48.3%	11.9%

negatively correlated with the correct IFRS application (−0.164, $p = 0.029$).[17]

We also found some relationships between application of revenue recognition choices and other expertise and demographic variables. Some of these variables were positively correlated with selecting the appropriate application of the revenue recognition standard under IFRS. Years of experience (0.168, $p = 0.026$) was positively correlated to the IFRS application of revenue recognition at the conventional ($p < 0.05$) level. Also, having a CPA license (0.131, $p = 0.083$) was positively correlated with the IFRS selection at a marginally significant level ($p < 0.10$). Therefore, experienced participants (e.g. director level) who were CPAs were more likely to select the correct treatment under IFRS.[18] An independent samples t-test was also run comparing level of experience to having a CPA license and revealed a statistically significant difference between the mean number of non-director level participants having a CPA license ($M = 0.836$, $s = 0.372$) and the director level participants having a CPA license ($M = 0.907$, $s = 0.293$, $t(127) = 1.368$, $p = 0.009$).[19]

On the other hand, both years of experience (−0.150, $p = 0.047$) and experience in the technology industry (−0.197, $p = 0.009$) were negatively correlated with the U.S. GAAP application at conventionally significant levels. Participants who indicated their job function was audit (0.158, $p = 0.036$) were more likely to select the U.S. GAAP choice.[20] This is a potential concern because financial managers should be able to appropriately apply the IFRS standard as they provided with specific guidance and implementation recommendations, as well as have more available resources.

Although it is not surprising that U.S. financial managers in the director level group selected the correct application of revenue recognition under IFRS more frequently than the financial managers in the non-director group, future research should examine qualities about experience and hierarchy of training (e.g., top down approach) to determine what is driving these results. When faced with both relevant and irrelevant information, for example, experienced participants are better at incorporating relevant information in their decision processes (Lombardi, 2012; Hoffman & Patton, 1997). One reason could be that less experienced participants do not realize the significant effect that irrelevant information has in making judgments. For example, experienced participants use strategies to obtain only the relevant information, while less experienced participants sequentially examine information, which exposes them to both irrelevant and relevant information (Biggs & Mock, 1983; Shelton, 1999).

[14] A cross-tabulation analysis (2 × 2 table) was also performed to further analyze IFRS as a response between non-director and director levels. The proportion of directors who responded with the U.S. GAAP option is significantly different ($p = 0.029$) than the non-director level. Also, both Phi and Cramer's V measures support this significant ($p = 0.029$) difference between level groups.

[15] Supplemental testing was performed to analyze the effects of experience, specifically less experienced (below manager) or experienced (manager and above). An independent samples two tailed t-test was run to compare the group's means and less experienced professionals selected the U.S. GAAP (0.625) treatment significantly ($p = 0.014$) more often than the experienced professionals (0.415). Also, experienced professionals selected the IFRS application (0.500) significantly more ($p = 0.026$) than less experienced professionals (0.271).

[16] Other supporting tests were run, which further support these results. A cross-tabulation analysis was run which shows that non-director level professionals preferred the U.S. GAAP answer over IFRS, and the opposite holds true for director level professionals. Results from Chi Square support that there is a statistically significant association ($X(1) = 7.011$, $p = 0.030$) between level (non-director or director) and response (U.S. GAAP or IFRS). Both Phi and Cramer's V measures also show a strong association ($p = 0.030$) between level and response.

[17] The correlations were also tested through Spearman's Rho and Kendall Tau, noting no significant differences in results regarding the experience level groupings (director level or non-director level) and IFRS or U.S. GAAP selections.

[18] Results with Spearman and Kendall Tau correlations were significantly similar for experienced professionals with a CPA license selecting the IFRS choice.

[19] Two tailed t-test, significant at the 0.05 level.

[20] Results with Spearman and Kendall Tau correlations were significantly similar for years of experience, technology industry, and audit function selecting the U.S. GAAP choice.

Table 4
Correlation matrix (N = 176).

Variable	Director	Non-director	Choice		Industry		Function				Certification	Years
			U.S. GAAP	IFRS	Banking & securities	Technology	Accounting	Information technology	Audit	Tax	CPA	experience
Director	1.000	−1.000**	−0.199**	0.164*	−0.105	−0.009	−0.007	−0.099	−0.019	−0.088	0.094	0.307**
p-Value		0.000	0.008	0.029	0.167	0.902	0.923	0.193	0.805	0.248	0.213	0.000
Non-director	−1.000**	1.000	0.199**	−0.164*	0.105	0.009	0.007	0.099	0.019	0.088	−0.094	−0.307**
p-Value	0.000		0.008	0.029	0.167	0.902	0.923	0.193	0.805	0.248	0.213	0.000
U.S. GAAP	−0.199**	0.199**	1.000	−0.785**	0.094	−0.197**	−0.075	0.137	0.158*	0.136	−0.095	−0.150*
p-Value	0.008	0.008		0.000	0.214	0.009	0.322	0.070	0.036	0.071	0.208	0.047
IFRS	0.164*	−0.164*	−0.785**	1.000	−0.153*	0.132	0.034	−0.083	−0.124	−0.107	0.131	0.168*
p-Value	0.029	0.029	0.000		0.043	0.082	0.657	0.272	0.101	0.157	0.083	0.026
Industry: banking & securities	−0.105	0.105	0.094	−0.153*	1.000	−0.060	−0.005	0.027	−0.045	−0.039	−0.301**	−0.010
p-Value	0.167	0.167	0.214	0.043		0.430	0.949	0.721	0.555	0.610	0.000	0.898
Industry: technology	−0.009	0.009	−0.197**	0.132	−0.060	1.000	0.173*	−0.047	−0.031	−0.027	0.083	−0.042
p-Value	0.902	0.902	0.009	0.082	0.430		0.021	0.533	0.683	0.724	0.275	0.584
Function: accounting	−0.007	0.007	−0.075	0.034	−0.005	0.173*	1.000	−0.273**	−0.179*	−0.155*	0.313**	0.160*
p-Value	0.923	0.923	0.322	0.657	0.949	0.021		0.000	0.017	0.040	0.000	0.034
Function: information technology	−0.099	0.099	0.137	−0.083	0.027	−0.047	−0.273**	1.000	−0.035	−0.031	−0.053	0.092
p-Value	0.193	0.193	0.070	0.272	0.721	0.533	0.000		0.641	0.687	0.482	0.226
Function: audit	−0.019	0.019	0.158*	−0.124	−0.045	−0.031	−0.179*	−0.035	1.000	−0.020	0.062	−0.054
p-Value	0.805	0.805	0.036	0.101	0.555	0.683	0.017	0.641		0.791	0.413	0.476
Function: tax	−0.088	0.088	0.136	−0.107	−0.039	−0.027	−0.155*	−0.031	−0.020	1.000	0.054	−0.053
p-Value	0.248	0.248	0.071	0.157	0.610	0.724	0.040	0.687	0.791		0.480	0.483
Certification: CPA	0.094	−0.094	−0.095	0.131	−0.301**	0.083	0.313**	−0.053	0.062	0.054	1.000	0.483**
p-Value	0.213	0.213	0.208	0.083	0.000	0.275	0.000	0.482	0.413	0.480		0.000
Years experience	0.307**	−0.307**	−0.150*	0.168*	−0.010	−0.042	0.160*	0.092	−0.054	−0.053	0.483**	1.000
p-Value	0.000	0.000	0.047	0.026	0.898	0.584	0.034	0.226	0.476	0.483	0.000	

* Correlation is significant at 0.05 level (2 tailed).
** Correlation is significant at 0.01 level (2 tailed).

At the end of the study, there was an option for participants to make open-ended comments. Two research assistants, who were unfamiliar with the research questions in the study, categorized the comments. Their inter-rater agreement was 100%. Of the 155 participants who either selected the U.S. GAAP or IFRS revenue treatment, two topics were mentioned consistently regardless of which treatment was selected: the upgrades or future service elements of the contract and the fact that there were multiple revenue recognition elements. Neither of these topics was correlated with the correct (IFRS) or incorrect (U.S. GAAP) choice.[21] However, of the 70 participants who correctly applied the IFRS choice six (9.8%) mentioned straight-line revenue recognition, which was positively correlated with selecting the IFRS choice (0.191, p = 0.011) and negatively correlated with the incorrect revenue recognition response of U.S. GAAP (−0.197, p = 0.009). Of the 85 participants who incorrectly (U.S. GAAP) applied the standard, none of them mentioned straight-line revenue recognition. Therefore, future research could examine ways of enhancing U.S. financial managers' ability to appropriately apply the newly converged principles-based standard on revenue recognition. Refer to Table 5 for comments made by participants whom selected either U.S. GAAP or IFRS revenue treatment.

5. Conclusion

The FASB and IASB are currently working towards overall convergence of accounting standards, and the SEC has indicated that it remains committed to this happening in the future. In addition, there are many multinational corporations with operations in the United States that have parents and subsidiaries that mix IFRS and U.S. GAAP. The purpose of this exploratory study is to examine the readiness of U.S. financial managers for principles-based IFRS in a revenue recognition context.

To our knowledge, this is one of the first studies to examine whether United States (U.S.) financial managers are able to appropriately record and summarize transactions in accordance with IFRS. The results of this study show that U.S. financial managers are either misapplying revenue recognition under IFRS or not understanding the standard and defaulting to U.S. GAAP. The findings of our study suggest that many U.S. financial managers may not be ready for IFRS, and may default to the U.S. GAAP answer, even when given the relevant IFRS guidance. Overall, these results indicate that there is a significant need for additional IFRS support for U.S. financial managers, particularly, if they lack relevant experience. Although about 40% of the participants did select the correct answer under IFRS, when given the relevant guidance, and experienced participants were more likely to select the IFRS choice, the majority of participants in our study did not. Training appears to be especially important for less experienced participants and non-CPAs. Future research can examine the impact of this training on the proper application of IFRS, and how training and experience may give U.S. financial managers the appropriate conceptual foundation under IFRS. Also, previous literature has supported the notion that the use of decision aids could be useful in assisting professionals in both in the learning or training of IFRS (Lombardi, 2012; Bell & Carcello, 2000; Gillett & Uddin, 2005; Hampton, 2005; Rose, 2002).

There are several important implications for future research based on the results of this exploratory study. Recently, the FASB and IASB jointly issued a new revenue recognition standard. Although the standard provided to participants of this study was current at the time of

Table 5
Comments made by participants who responded either U.S. GAAP or IFRS.

	IFRS	U.S. GAAP	Totals
N	85	70	155
Made comment	72	61	133
Conservatism	3	2	5
Matching principle/accrual	4	2	6
Upgrades/future services	36	34	70
IAS 18/IFRS	5	8	13
Straight-line	6	0	6
Multiple elements	25	27	52
Non-refundable	8	13	21

[21] An independent samples t-test was also run comparing both comments to the correct or incorrect choice and both failed to reveal a statistically reliable difference between the means of the respective comment with selecting the correct or incorrect choice (Two tailed t-test, significant at the 0.05 level).

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data collection, future research could investigate if U.S. managers are able to apply the new standard more successfully than the participants in this study under the old standard. However, the results of this study provide a baseline for future research, and raise significant concerns about the ability of U.S. financial managers to apply principles-based IFRS revenue recognition principles.

Future research can also examine if IFRS training can influence IFRS knowledge acquisition and performance on tasks using IFRS. In addition, prior research is limited regarding firm training, both in general and related to IFRS. It would be helpful to determine if training is completed on a top level down approach, so the effectiveness of IFRS training could be better evaluated, and potentially complement our finding that directors are significantly applying the IFRS standards more appropriately than non-directors. Researchers can also examine the effects on training and learning with the use of decision aids. Researchers can also examine if differences in information search and processing (such as protocols and search monitoring) can influence IFRS knowledge acquisition and performance on tasks using IFRS. Future research could examine whether a lack of IFRS knowledge by U.S. financial managers leads to higher inherent risk assessments which would affect audit planning or result in a higher likelihood of errors regarding IFRS application.

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Appendix 1. Revenue recognition: U.S. GAAP vs. IFRS

Revenue recognition — general	US GAAP	IFRS
The concept that IFRS is principles-based, and US GAAP being principles-based but also rules-laden, is perhaps nowhere more evident than in the area of revenue recognition.	Revenue recognition guidance is extensive and includes a significant volume of literature issued by various US standard setters.	Two primary revenue standards capture all revenue transactions within one of four broad categories: – Sale of goods – Rendering of services – Others' use of an entity's assets (yielding interest, royalties, etc.) – Construction contracts
This fundamental difference requires a detailed, transaction-based analysis to identify potential GAAP differences.	Generally, the guidance focuses on revenue being (1) either realized or realizable and (2) earned. Revenue recognition is considered to involve an exchange transaction; that is, revenue should not be recognized until an exchange transaction has occurred. These rather straightforward concepts are augmented with detailed rules.	Revenue recognition criteria for each of these categories include the probability that the economic benefits associated with the transaction will flow to the entity and that the revenue and costs can be measured reliably. Additional recognition criteria apply within each broad category.
Differences may be affected by the way companies operate, including, for example, how they bundle various products and services in the marketplace.	A detailed discussion of industry-specific differences is beyond the scope of this publication. For illustrative purposes only, we note that highly specialized guidance exists for software revenue recognition. One aspect of that guidance focuses on the need to demonstrate VSOE of fair value in order to separate different software elements in a contract. This requirement goes beyond the general fair value requirement of US GAAP.	The concept of VSOE of fair value does not exist under IFRS, thereby resulting in more elements likely meeting the separation criteria under IFRS.

Source: PricewaterhouseCoopers, LLP website (http://www.pwc.com/en_US/us/issues/ifrs-reporting/publications/assets/ifrs-and-us-gaap-similarities-and-differences-2012.pdf) IFRS readiness series, October 2012. These rules were relevant to the revenue recognition standard pre-May 2014.

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