5-24-2013

# Impact of adoption of IFRS 8 on Quality of Financial Reporting of Foreign Companies Listed on U.S. Securities Exchanges

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# The Impacts of IFRS 8 on Segment Disclosures of Foreign Companies Listed on the U.S. Stock Exchanges

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6/26/2013

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ABSTRACT

In this study, the results on the difference between reporting under IFRS 8 "*Operating Segments*" and under IAS 14 "*Segment Reporting*" are reported for a sample of foreign publically traded companies listed on the U.S. stock exchanges for the periods of pre- and post-adoption of IFRS 8. Seven aspects related to the comparison are examined: definition of segments, number of segments disclosed, line items reported for each segment, number of items and words reported for segments, number of geographic areas disclosed, definition of geographic segments, and items reported in geographic disclosure. Upon adopting IFRS 8, the majority of the firms remained their operating segments as they were under IAS 14. There was a marginal increase in the number of business segments and the total number of segments disclosed, and a marginal decrease in the number of geographic segments reported. No significant change was discovered in the distribution of number of business segments, geographic segments, and all segments disclosed upon adopting IFRS 8. The majority of the firms did not change the number of segments reported. However, more words appeared in the segment disclosure notes. Most companies presented their geographic segments as the enterprise-wide disclosures. There were more disclosures on individual-level countries/regions than on the broader geographic areas during the after-adoption period. Overall, there were insignificant changes in the geographic segment disclosure. Nonetheless, companies tended to report finer geographic information on individual countries/regions and less line items in their geographic segment disclosure after IFRS 8. In summary, the overall results indicated that the impact on companies' segment disclosure upon the adoption of IFRS 8 was not significant.

*"No transparency, no trust;*
*No trust, no credit;*
*No credit, no investment;*
*No investment, no growth!*
*So here is the simple logic: financial reporting is an essential building block for financial intermediation, investment, and sustainable economic development."*

*- Martin Gruell*
*Raiffeisen International*

## I. INTRODUCTION

Financial reporting refers to the process of periodically providing financial information to external users, such as shareholders, investors, creditors, government, and research scholars. The objective of financial reporting is to help existing and potential capital providers—investors, lenders, and other creditors—of the reporting entity with their decision making. Such information is primarily communicated through financial statements and the related disclosure notes. The four financial statements are balance sheet, income statement, statement of cash flows, and statement of shareholders' equity. Financial reporting plays a critical function in the market economy. With the improved quality, comparability and transparency of financial information, capital providers are able to make informed decisions in their best capacity and to efficiently allocate economic resources.

The Financial Accounting Standards Board (FASB) of the United States (U.S.) and the International Accounting Standards Board (IASB) established separate sets of accounting and reporting standards, known as the Generally Accepted Accounting Principles (GAAP) and the International Financial Reporting Standards (IFRS), respectively. IFRS is adopted by countries in the European Union and many other nations around the world. Before 2007, foreign publically traded companies listed on the U.S. stock exchanges could either use U.S. GAAP for their financial reports filed with the Securities and Exchange Commission (SEC), or reconcile their SEC filings to U.S. GAAP if other accounting standards were used, regardless where their headquarters are located and which accounting principles are adopted in their home countries. In 2007, the SEC voted unanimously to allow foreign public firms listed on the U.S. exchanges to use IFRS as the alternative to U.S. GAAP for their SEC filings without reconciliation to U.S. GAAP.

In today's global economy, many companies have chosen to diversify their operations into various lines of businesses and/or geographic locations to achieve sustainable growth, explore new markets, and reduce operating risks. Multinational companies are striving to provide relevant and important information on business activities and operating environment to help financial statements users better understand the enterprise's performance, assess its prospects for future profitability, and make more informed judgments about the company as a whole. Both U.S. GAAP and IFRS require companies that engage in more than one significant business to provide supplemental information concerning their business segments, generally including operating segments and/or geographic areas.

Segment reporting is the practice of presenting financial information of business segments of a reporting entity in the disclosure notes to financial statements. Microsoft Corporation, for example, has disclosed in its 2012 annual report that the company operates in five primary business segments—Windows & Windows Live Division, Server and Tools Division, Online Services Division, Microsoft Business Division, and Entertainment and Devices Division—in three major geographic areas: the United States, Luxembourg, and the other countries. The consolidated financial statements of Microsoft reveal little or no relevant information regarding to the performance of its individual business segments. The results of these different business activities were aggregated into one single set of consolidated financial statements, causing difficulty for the financial statements users to analyze and make an informed projection about the company's future performance, both on the segmental level and as a whole. Therefore, segment disclosure is required to address such issues. The supplemental information does not have to be a complete set of financial statements for each segment, and only certain specified items are required. For example, in the 2012 annual report, Microsoft disclosed revenue, operating income (loss), and long-lived assets of its operating and geographic segments.

Currently, under both the Statement of Financial Accounting Standards (SFAS) 131 of U.S. GAAP, *Disclosures about Segments of an Enterprise and Related Information*, and IFRS 8, *Operating Segments*, segment reporting is required for publicly traded companies only. It does not apply to non-for-profit organizations, non-public companies, or separate financial statements of members of a consolidated group if both the separate company financial statements and the consolidated or combined financial statements are included in the same financial report.

To facilitate the comparison of financial information among reporting entities, the FASB and IASB are moving rapidly towards converging U.S. GAAP and IFRS. As part of the convergence efforts, IASB published IFRS 8 in November 2006, which became effective for annual financial reporting on and after January 1, 2009, with early adoption permitted. IFRS 8 replaces International Accounting Standards (IAS) 14, *Segment Reporting*. The objective of IAS 14 (*Revised* 1997) was to establish principles for segment reporting by line-of-business and by geographical areas. However, under IAS 14, the criteria for defining operating segments and disclosing related information was not limited solely for management reporting purposes. Therefore, companies could prepare different types of segment information, the information viewed internally by management and the information reported externally in conformance with IAS 14. In many cases, these different sets of reporting caused concerns to financial statements users in that the flexibility in the application of the segment definition under IAS 14 provided few relevancies on how a company manages its segment operations. Moreover, the segment reporting guidelines in IAS 14 might have been exploited by companies to suit their own financial reporting purposes (Herrmann and Thomas, 2000).

IFRS 8 fundamentally alters the reporting of segment information on a company's financial statements. Under IFRS 8, the reported segment information is required to be the information actually used by management for making operating decisions and evaluating performance of the business segments. The rationale behind this reporting strategy is in line with that of SFAS 131 of U.S. GAAP, which is commonly known as the management approach (FASB 1997, 4). Similar to SFAS 131, the primary reason for the change in reporting segment information is to enable financial statements users to evaluate a company's information through "the eyes of management". A critical aspect of IFRS 8 is to require the information reported be actually evaluated internally by management. The disclosure of certain confidential information raises management concerns that potential competitive harm would be generated by unveiling strategic plans of the company to competitors. However, the IASB states that, because the segment information required to be disclosed will be available from internal reporting purposes, it should be more cost-effective and timesaving to companies (IASB 2006, 3).

The purpose of this paper is to examine the impact of the adoption of IFRS 8 on segment reporting by comparing and analyzing the segment disclosures reported under IFRS 8 and IAS 14. We selected a sample of foreign firms listed on the U.S. stock exchanges, and hand-collected the segment disclosure information of those companies reported on their financial statement disclosure notes from both prior and after the adoption of IFRS 8. We examined the changes in segment definition, number of segments reported, items disclosed for each segment, number of items and words reported for each segment, as well as change in geographic segment definition, number of geographical areas, and number of items reported for each geographic segment under IFRS 8 as enterprise-wide disclosures.

This paper continues as follows. Section II reports the sample selection process. Section III presents the results of analysis and comparison. Conclusion and the impact of IFRS 8 are discussed in Section IV.

## II. SAMPLE SELECTION

Using the Bank of New York website, we identified 393 foreign companies listed on the U.S. stock exchanges through American Depository Receipt (ADRs) as of November 21, 2012. An ADR is a negotiable security that represents securities of a non-U.S. company publically traded in the U.S. financial markets. Foreign firms deposit their trading shares with a U.S. depository bank (e.g. Bank of New York) to receive an ADR. There are four types of ADRs: unsponsored ADR, sponsored level-I, sponsored level-II, and sponsored level-III. The first two types of ADRs, unsponsored ADR and sponsored level-I, represent no listing or publically issued securities and those securities are traded only in the over-the-counter (OTC) market. Because OTC securities are not subject to SEC registration and requirements for financial reporting, these two types of ADRs are not included in our sample of 393 firms. Only sponsored level-II and level-III ADRs are included as those firms are required to file a Form 20-F with the SEC annually. Companies are excluded if their annual reports, Form 20-F, are not available in the

SEC's EDGAR database. Financial institutions are also excluded due to the discrepancies in financial statement components and different disclosure requirements. To examine the impact of the adoption of IFRS 8 on segment reporting, only companies that have adopted IFRS during both pre- and post- IFRS 8 periods are included.

As a result, the final sample consists of 78 foreign firms that are cross-listed in the U.S. and filed their financial statements with the SEC. Seven firms in the sample chose early adoption of IFRS 8. For each sample firm, detailed segment disclosure information under IFRS 8 and under IAS 14 from prior year was collected by examining their Form 20-F in the SEC's EDGAR database. To examine the impact of the adoption of IFRS 8 on the firms' financial reporting, such parallel collection of data is crucial for the comparison of the information presented under the two sets of accounting standards. A list of the 78 sample firms with their Standard Industrial Classification (SIC) code is provided in Table 1.

---------- Insert Table 1 about Here ----------

## III. RESULTS

### Definition of Segments

Under IAS 14, an operating segment is defined as business- or geography-based component that is subject to risks and returns that are different from those of other components (IAS 14, para. 9). IFRS 8, however, takes a fundamentally different approach to segment definition. It defines an operating segment as a component of an entity that (1) engages in business activities from which it may earn revenues or incur expenses (including revenues and expenses relating to transactions with other components of the same entity), that (2) whose operating results and performance are reviewed and assessed regularly by the entity's chief operating decision maker (CODM) to make decisions on resource allocation, and (3) for which discrete financial information is available (IFRS 8, para. 2). The basis of identifying operating segments can be line-of-business, products and services, geographic areas, customer type, reporting groups, or any other applicable basis, or a combination of any of these so long as it is consistent with the core principle of IFRS 8, which states that disclosed information should enable users of the financial statements to evaluate the nature and financial performance of business segments in ways that management does internally for decision-making purposes (IFRS 8, para. 1).

---------- Insert Table 2 about Here ----------

Table 2 provides a summary of segment definitions used by the 78 sample firms during pre- and post-IFRS 8 periods. In this study, operating segments are identified by the sample firms as one of the followings: line-of-business, geographic areas, products and services, line-of-business and products and services, products and services and geographic areas, business activities, and business reports. Of the 78 firms examined, before the adoption of IFRS 8, 43 firms (55%) define segments by separate line-of-business and geographic areas, and 11 firms (14%) define segments by products and services and geographic areas. After the adoption of IFRS 8, the number of firms that use line-of-business and geographic areas remains at 43 (55%). Four more firms (5%) use products and services and geographic areas. Overall, fourteen firms (18%) changed the definition of operating segment during the period. The total number of firms using single definition of operating segments decreases from 18 (23%) to 14 (18%). The majority of the firms (55%) still define their segments by a combination of line-of-business and geographic areas. In sum, upon the adoption of IFRS 8, the identification of an entity's segments may or may not change, depending on how an entity has applied IAS 14 in the past.

**Number of Segments**

IFRS 8 basically adopted the quantitative thresholds and aggregation rule specified under IAS 14 for measuring reportable segments. Under IFRS 8, reportable segments are operating segments or aggregations of operating segments that meet the following criteria: (1) its reported revenue, from both external customers and intersegment sales or transfers, is 10% or more of the combined revenue, internal and external, of all operating segments; or (2) the absolute amount of its reported profit or loss is 10% or more of the greater, in absolute amount, of (a) the combined reported profit of all operating segments that did not report a loss or (b) the combined reported loss of all operating segments that did report a loss; or (3) its assets are 10% or more of the combined assets of all operating segments (IFRS 8, para.13).

Two or more operating segments may be combined and reported as one single reportable segment if the aggregation provides useful information and helps financial statements users better evaluate the business and the economic environment. The aggregation rule also applies if the combined segments share similar economic aspects such as the nature of the products and services, the supply and distribution in the production processes, the type of customers, and/or the regulatory environment, if applicable (IFRS 8, para. 12).

After determining the reportable segments, the entity has to ensure that the total external revenue attributable to those reportable segments is at least 75% of the entity's consolidated revenue. If the total external revenue reported by operating segments constitutes less than 75% of the entity's consolidated revenue, additional operating segments must be identified as reportable segments, even if they do not meet the quantitative thresholds aforementioned, until at least 75% of the entity's consolidated revenue is included in reportable segments (IFRS 8, para.15). This quantitative thresholds and aggregation are in line with SFAS 131 of U.S. GAAP.

---------- Insert Table 3 about Here ----------

The results of number of segments reported before and after IFRS 8 are presented in Table 3. Panel A of Table 3 reports the mean and median number of segments disclosed. Before the adoption of IFRS 8, the mean (median) of number of business segments is 3.41 (3.00). The mean (median) of number of geographic segments is 3.58 (4.00). The mean (median) of total number of segments is 7.01 (7.00). After the adoption of IFRS 8, the mean (median) of number of business segments is 3.50 (4.00). The mean (median) of number of geographic segments is 3.55 (3.00). The mean (median) of total number of segments is 7.06 (7.00). Overall, there was only a marginal increase in the number of business segments and the total number of segments, and a marginal decrease in the number of geographic segments.

Panel B of Table 3 reports the distribution of number of segments disclosed. In our analysis, there was no significant change in the distribution of number of business segments, geographic segments, and all segments disclosed under IAS 14 and IFRS 8.

Panel C of Table 3 reports the change in number of segments disclosed. Among 78 sample firms, 7 firms had an increase in the number of business segments, 6 firms had an increase in the number of geographic segments. In sum 13 firms (17%) had an increase in the number of segments reported. Also, 7 firms had a decrease in the number of business segments, and 7 firms had a decrease in the number of geographic segments. In total, 11 firms (14%) had a decrease in the number of segments reported. The majority of firms (54 firms, 69%) did not change the number of segments upon adoption of IFRS 8. Overall, the adoption of IFRS 8 did not have a significant impact on the number of reportable segments of the sample firms. This is likely due to the almost-the-same set of the quantitative thresholds and aggregation rules adopted by IFRS 8 compared to IAS 14.

**Items Reported for Each Segment**

IAS 14 specified certain items of revenue and expense must be included in reported segment revenues and segment expenses. For the primary segments of an entity, IAS 14 *revised* required firms to disclose segment revenues (separated from external and intersegment), earnings, segment assets and liabilities, additions to long-lived assets and other capital, depreciation and amortization, share in earnings of associates and joint ventures accounted for by the equity method, and material non-cash items other than depreciation and amortization (IAS 14, para.51-67). For the secondary segments of an entity, items to be disclosed were revenues, assets, and additions to capital (IAS 14 para.69-72). Under IFRS 8, in addition to the items required by IAS 14 mentioned above, the disclosure of income tax expense, interest revenues and expenses, and material items of income and expense disclosed in accordance with paragraph 86 of IAS 1 *Presentation of Financial Statements* are also required, if they are viewed by CODM (IFRS 8, para. 23).

Table 4 presents the comparison of the difference in items reported by the sample firms between pre- and post-IFRS 8 adoption. Panel A of Table 4 lists some specific items which are disclosed by more companies during the post-adoption period compared to the pre-adoption period. For example, 8 more firms (10%) disclosed earnings, income before tax, additions to capital, for instance property, plant and equipment, impairment, upon the adoption of IFRS 8. Panel B of Table 4 lists the specific items which were disclosed by fewer companies during the post-adoption period compared to the pre-adoption period. Surprisingly, after the adoption of the new standard, there was a significant decrease in the number of firms disclosing the following items: income tax expense (27% less), segment liabilities (18% less), segment assets (17% less), share in earnings of associated and joint ventures accounted for by the equity method (12% less), and depreciation and amortization (8% less), even as IFRS 8 requires the disclosure of such items, if viewed by CODM.

---------- Insert Table 4 about Here ----------

**Number of Items and Words Reported for Each Segment**

Neither IFRS 8 nor IAS 14 has the requirement for the specific number of items (except for the required items to be disclosed) or a particular number of words to be presented in a company's segment reporting note. In this study, we found that the mean (median) of number of items disclosed before the adoption of IFRS 8 is 15.91 (15.00), greater than the mean (median) of number of items disclosed after the adoption of IFRS 8, 15.03 (15.50); however, the mean (median) of number of words disclosed before IFRS 8 is 1242.08 (1143.00), less than the mean (median) of number of words disclosed after the adoption of IFRS 8, 1466.22 (1369.00). In sum, the number of items disclosed decreased marginally, whereas the number of words in the presentation of segment notes increased, which is evidenced by more explanatory paragraphs and relevant descriptions embedded in firms' segment reporting notes. These results also indicated a tendency to increase the fineness of segment disclosures upon the adoption of the new standard. The detailed results of the number of items and the number of words reported for each segment are shown in Table 5.

---------- Insert Table 5 about Here ----------

**Number of Geographic Areas**

Under IAS 14, the basis for segmentation is categorized into primary and secondary; with the secondary segment having considerably less disclosure requirements. A company must determine which segments, business or geographical, are the primary segment and which are the secondary segment (IAS 14, para.26-27). Geographic segments were, supposedly, reported as the secondary segments if they were not disclosed as the primary segments.

Under IFRS 8, however, the primary and secondary segment formats are no longer in effect. Instead, a company that determines its operating segments based upon its products and services, for example, does not have to provide geographic segment information other than the specific items required for the enterprise-wide disclosures. These items include (1) revenues from external customers for each product and service, (2) revenues from domestic external customers and from all foreign external customers, (3) revenues from a particular individual/group of collective foreign external customer(s), if the amount is material, (4) non-current assets (besides financial instruments, deferred tax assets, post-employment benefit assets) that are domestically owned and that are held in all foreign countries, (5) non-current assets held in an individual foreign country, if the amount is material, (6) major customers and details if revenue earned from this customer(s) is 10% or more than the entity's consolidated revenues (IFRS 8, para. 31). The enterprise-wide disclosure rule also applies to companies that have only one reportable segment.

In our analysis, we found that the majority of geographic segment disclosures under IFRS 8 are enterprise-wide disclosures. Panel A of Table 6 shows that 53 of the 78 sample firms provided their geographic areas information as the enterprise-wide disclosures under IFRS 8, compared to 52 firms reported geographic areas as the secondary segments under IAS 14. The mean (median) number of distinct geographic segments was 4.0 (4.0) under IFRS 8 compared to 4.2 (4.0) under IAS 14. There was a slight decrease in the number of geographic areas disclosed upon the adoption of IFRS 8. The remaining 25 firms either reported their geographic segments as operating segments or did not report geographic segments.

Panel B of Table 6 summarizes the distribution of the number of geographic areas disclosed between IFRS 8 and IAS 14. There was no significant discrepancy in the number of geographic areas disclosed between IFRS 8 and IAS 14 as well. The majority firms reported three or four geographic areas under both standards. However, some companies displayed large change in the number of geographic areas disclosed after IFRS 8. For instance, Glaxo Smith Kline had the largest increase, by six, in the number of geographic segments disclosed going from five segments in the pre-adoption period to eleven geographic segments in the post-adoption period. Amarin and Tenaris had the largest decrease in the number of geographic segments disclosed. Both companies had the numbers of geographic segments decreased by four upon the adoption of the new standard. Overall, the distribution of the number of geographic areas changed insignificantly after the adoption of IFRS 8.

---------- Insert Table 6 about Here ----------

**Definition of Geographic Segments**

The geographic segments disclosed under both standards can be defined by two categories: individual countries/regions and broader geographic areas. Since none of the standards has requirement on the minimum number of geographic segments to be reported, it is at the management’s discretion to present such information when applying the quantitative thresholds calculation and aggregation rule to determine their geographic segments. Table 7 lists the individual countries/regions and broader geographic areas reported under IFRS 8, in Panel A, and under IAS 14, in Panel B.

---------- Insert Table 7 about Here ----------

Under both standards, the U.S., United Kingdom (U.K.), and China were the three most frequently reported individual-level geographic segments by the sample firms. 22 firms reported the U.S. as a geographic segment under both standards and 19 firms reported U.K. segment under both standards. But 10 firms reported China under IFRS 8 compared to that of 11 firms did under the old standard. Four more firms reported Hong Kong, Macau, and Taiwan as one aggregated geographic segment under IFRS 8 increasing from 2 companies under IAS 14 to 6 firms, which represents the largest increase in a single segment area reported. Another noticeable change is the increase in reporting Brazil as a geographic segment. Seven firms reported Brazil under IFRS 8, three more compared to four, that of under IAS 14.

On the contrary, the broader geographic areas were reported less frequently under IFRS 8 compared to IAS 14. Europe was reported as a geographic segment by 17 firms, down from 22 firms from the pre-adoption period. North America was also reported less by the firms, decreased from 17 under IAS 14 to 13 under IFRS 8. Asia Pacific and Rest of Europe/Other Europe also witnessed the decrease in number of firms reporting—both lost 4 firms in reporting it.

In summary, there are 123 individual countries/regions reported as geographic segments under the new standard, greater than 113 countries/regions reported under IAS 14. The number of broader geographic areas reported under IFRS 8 is 107 areas, less than 125 areas under IAS 14. As expected, this combined result suggests that companies tend to report finer information about geographic segments upon the adoption of the new standard.

**Items Disclosed for Each Geographic Area**

According to the requirement for the enterprise-wide disclosure aforementioned, IFRS 8 only requires three specific items to be reported, namely revenues (both internal and external), non-current assets, and major customers (IFRS 8, para. 31). IAS 14 requires revenues (both internal and external), segment assets, and capital additions (including, but not limited to, additions to property, plant, and equipment, and capital expenditure, etc.) to be disclosed for secondary segments (IAS 14, para. 69-72). Therefore, it was assumed that fewer items were to be disclosed upon the adoption of the new standard.

Table 8 lists the items reported for geographic segments under IFRS 8 and under IAS 14. The mean (median) of the number of items disclosed for each geographic area is 3.0 (2.0) under the new standard and 3.7 (3.0) under IAS 14. As expected, the majority of companies, 40 of the 53 sample firms, continue to report revenues in compliance with the new requirements; and 26 of the 53 firms reported information on non-current assets (including property, plant and equipment, intangibles, and net fixed assets), increasing from that of 17 firms under IAS 14. However, the disclosure of earnings (including earnings before interest, taxes, depreciation, amortization, operating income and loss, and earnings before tax) and additions to capital (for instance, additions to property, plant, and equipment, and capital expenditure) have decreased significantly. Only a small portion of the firms disclosed these items voluntarily.

---------- Insert Table 8 about Here ----------

These results suggest that even though companies generally report finer information about their geographic locations under IFRS 8, the disclosure on some specific items, for example, earnings and capital expenditure, has decreased. The reduction in the disclosure of such items may make it less informative for capital providers to make their decisions. One possible reason that companies chose to disclose less specific items of their geographic segments may be caused by management concerns over potential competitive harm (Herrmann and Thomas, 2000). Because providing too much detailed internal information to outsiders may also give competitors the opportunity to gain insight into a company's strategic plans and operations, especially when reported geographic areas became finer. To alleviate such concerns for management, IFRS 8 requires less specific items to be reported for the enterprise-wide disclosures.

## IV. CONCLUSION

The study results on the difference between reporting under IFRS 8 and under IAS 14 are reported for a sample of foreign publically traded companies listed on the U.S. stock exchanges for the periods of both pre- and post-adoption of the new standard. Seven aspects related to the comparison are examined: definition of segments, number of segments disclosed, line items reported for each segment, number of items and words reported for segments, number of geographic areas disclosed, definition of geographic segments, and items reported in geographic disclosure.

A few companies changed the definition of their operating segments, with the most noticeable decrease in definition is line-of-business (only) and the most increase in definition is products and services & geographic areas upon the adoption of IFRS 8. The majority of the firms remained a combination of line-of-business & geographic areas as their operating segments after adopting the new standard. There was a marginal increase in the number of business segments and the total number of segments disclosed, and a marginal decrease in the number of geographic segments reported. There was no significant change in the distribution of number of business segments, geographic segments, and all segments disclosed upon adopting the new standard. The majority of the firms did not change the number of segments reported. Even though the number of items disclosed after IFRS 8 did not vary significantly, more words appeared in the disclosure notes, evidenced by more explanatory paragraphs and detailed descriptions presented in the segment disclosure notes.

Most companies presented their geographic segments as the enterprise-wide disclosures. The majority of the firms reported three or four geographic areas. There was a noticeable increase in the proportion of individual-level countries/regions disclosed and a decrease in the proportion of broader geographic areas disclosed. Geographic segments defined by individual countries may be more informative because critical economic and political factors, such as GDP growth, interest rates, inflation, foreign currency translation rates, and political environment, are likely to vary by country (Herrmann and Thomas, 2000). Overall, no significant changes were found in the geographic segment disclosure. Nonetheless, companies tended to report finer geographic information on individual countries/regions and less line items in their geographic segment disclosure during the post-adoption period.

Despite firms are required to disclose their segment information in consistency with the manner that management uses to evaluate and assess the firm internally, the overall results, nonetheless, indicated that the impact on companies’ segment disclosure upon the adoption of IFRS 8 was not significant. Therefore, the primary innovative aspect of IFRS 8, the introduction of the management approach, should be caught in a theoretical view (Lucchese & Di Carlo, 2012). It is also acknowledged that the results may not be fully representative of the average publically traded non-U.S. firms that file their financial statements with the SEC on an annual basis.

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**Table 1**
**78 Firms Included in the Sample**

| Company Name | SIC | Company Name | SIC | Company Name | SIC |
|---|---|---|---|---|---|
| Aixtron | 3559 | DRDGOLD | 1040 | Reed Elsevier NV | 2700 |
| Alcatel-Lucent | 3661 | Eni | 1311 | Reed Elsevier PLC | 2700 |
| Aluminum Corporation of China | 3334 | Ericsson | 3633 | Samson Oil and Gas | 1381 |
| Amarin | 2834 | France Telecom | 4813 | Sanofi-Aventis | 2834 |
| AmBev | 2080 | Genetic Technologies | 2836 | SAP | 7372 |
| America Movil | 4812 | Gerdau | 3312 | Sappi | 2670 |
| ARM Holdings | 3674 | GlaxoSmithKline | 2834 | Siemens | 3600 |
| Astrazeneca | 2834 | Guangshen Railway | 4011 | Sims Metal Management | 5093 |
| Aviva | 7415 | Harmony Gold | 1040 | Sinopec Shanghai Petrochemical | 2800 |
| BHP Billiton | 1000 | Huaneng Power International | 4911 | Smith & Nephew | 3842 |
| BP | 2911 | InterContinental Hotels | 7011 | Statoil | 2911 |
| Braskem | 2860 | Korea Electric Power | 4911 | Sterlite Industries | 3330 |
| BT Group | 4813 | Luxottica | 3851 | Syngenta | 2870 |
| Centrais Eletricas Brasileiras-Eletrobras | 4911 | National Grid | 4911 | Telecom Italia | 4812 |
| CGG Veritas | 1382 | Nokia | 3663 | Telefonica | 4812 |
| China Eastern Airlines | 4512 | Novartis | 2834 | Tenaris | 3312 |
| China Mobile | 4812 | Novo Nordisk | 2834 | Torm | 4400 |
| China National Offshore Oil | 1311 | Orbital | 3510 | TOTAL | 1311 |
| China Petroleum & Chemical | 2911 | Partner Communications | 4812 | Trinity Biotech | 2835 |
| China Southern Airlines | 4512 | Pearson | 2730 | Turkcell Iletisim Hizmetleri | 4813 |
| China Telecom | 4813 | PetroChina | 1311 | Unilever | 2000 |
| China Unicom | 4812 | Petroleo Brasileiro-Petrobras | 2911 | Veolia Environnement | 4941 |
| City Telecom | 4813 | Philippine Long Distance Telephone | 4812 | VimpelCom | 4812 |
| CRH | 3241 | Portugal Telecom | 4812 | Vodafone Group | 4812 |
| Delhaize | 5411 | Prana Biotechnology | 2836 | WNS Holdings | 7389 |
| Diageo | 2085 | Randgold Resources | 1040 | Yanzhou Coal Mining | 1221 |

**Table 2**
**Definition of Segments Reported before and after IFRS 8**

| | Before Adoption N | After Adoption N | After - Before N |
|---|---|---|---|
| **Operating Segments defined as:** | | | |
| Line-of-business (only) | 9 | 5 | -4 |
| Geograhic Areas (only) | 6 | 4 | -2 |
| Products and Services (only) | 3 | 5 | 2 |
| Line-of-business & Geographic Areas | 43 | 43 | 0 |
| Products and Service & Geographic Areas | 11 | 15 | 4 |
| Business Activities | 5 | 4 | -1 |
| Business Reports | 0 | 1 | 1 |
| No Segment Reporting | 1 | 1 | 0 |
| Total | 78 | 78 | 0 |

| | | |
|---|---|---|
| Change in segment definition | 14 | 18% |
| No change in segment definition | 64 | 82% |
| Total | 78 | 100% |

Table 3

Number of Segments Reported before and after IFRS 8

Panel A: Mean and Median Number of Segments Disclosed

| | Before Adoption | | After Adoption | | Test of Difference (After - Before) | |
|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median |
| Number of Business Segments | 3.41 | 3.00 | 3.50 | 4.00 | 0.09 | 1.00 |
| Number of Geograhic Segment | 3.58 | 4.00 | 3.55 | 3.00 | -0.03 | -1.00 |
| Total Number of Segments | 7.01 | 7.00 | 7.06 | 7.00 | 0.05 | 0.00 |

Panel B: Distribution of the Number of Segments Disclosed

| | Before Adoption | | | After Adoption | | | Test of Difference (After-Before) | | |
|---|---|---|---|---|---|---|---|---|---|
| Number of Distinct Segments | Business Segments | Geograhic Segments | Total Segments | Business Segments | Geograhic Segments | Total Segments | Business Segments | Geograhic Segments | Total Segments |
| 0 | 4 | 12 | 1 | 4 | 10 | 1 | | 2 | |
| 1 | 5 | | | 3 | | 1 | 2 | | -1 |
| 2 | 14 | 8 | 4 | 14 | 9 | 5 | | -1 | -1 |
| 3 | 17 | 16 | 5 | 17 | 21 | 2 | | -5 | 3 |
| 4 | 20 | 24 | 5 | 21 | 22 | 5 | -1 | 2 | |
| 5 | 13 | 9 | 7 | 15 | 8 | 5 | -2 | 1 | 2 |
| 6 | 4 | 4 | 16 | 2 | 3 | 14 | 2 | 1 | 2 |
| 7 | | 2 | 8 | | 1 | 11 | | 1 | -3 |
| 8 | | | 10 | 1 | | 13 | -1 | | -3 |
| 9 | | | 11 | | 1 | 10 | | -1 | 1 |
| 10 | | | 3 | | 1 | 3 | | -1 | |
| 11 | | | 2 | | | 2 | | | |
| 12 | | 1 | 3 | 1 | 1 | 3 | -1 | | |
| 13 | 1 | 2 | | | 1 | | 1 | 1 | |
| 14 | | | 1 | | | 2 | | | -1 |
| 17 | | | 1 | | | | | | 1 |
| 18 | | | 1 | | | 1 | | | |

Panel C: Change in the Number of Segments Disclosed

| | Business Segments | Geograhic Segments | Total Segments | |
|---|---|---|---|---|
| Increase | 7 | 6 | 13 | 17% |
| Decrease | 7 | 7 | 11 | 14% |
| No Change | 64 | 65 | 54 | 69% |
| Total | 78 | 78 | 78 | 100% |

**Table 4**
**Items Reported for Each Segment**

**Panel A: Increases in number of items reported for each segment**

| Specific Items | Before Adoption | | After Adoption | | Test of Difference (After-Before) | |
|---|---|---|---|---|---|---|
| Earnings (P/L) | 53 | 68% | 61 | 78% | 8 | 10% |
| Income before Tax | 32 | 41% | 40 | 51% | 8 | 10% |
| Additions to PP&E | 6 | 8% | 14 | 18% | 8 | 10% |
| Impairment | 34 | 44% | 42 | 54% | 8 | 10% |
| Investment Income or Loss | 1 | 1% | 8 | 10% | 7 | 9% |
| Assets Acquisition | 0 | 0% | 7 | 9% | 7 | 9% |
| Gross Profit | 11 | 14% | 17 | 22% | 6 | 8% |
| EBITDA | 1 | 1% | 6 | 8% | 5 | 6% |
| Profit or Loss on Disposal of Assets | 4 | 5% | 9 | 12% | 5 | 6% |
| Unallocated costs | 1 | 1% | 6 | 8% | 5 | 6% |
| Net Finance Expense | 29 | 37% | 33 | 42% | 4 | 5% |
| Goodwill | 5 | 6% | 9 | 12% | 4 | 5% |
| G/L on Derivative Financial Instrument | 1 | 1% | 5 | 6% | 4 | 5% |
| Current/Defered Tax Assets | 6 | 8% | 10 | 13% | 4 | 5% |

**Panel B: Decreases in number of items reported for each segment**

| | | | | | | |
|---|---|---|---|---|---|---|
| Income Tax Expense | 59 | 76% | 38 | 49% | -21 | -27% |
| Segment Liabilities | 58 | 74% | 44 | 56% | -14 | -18% |
| Segment Assets | 72 | 92% | 59 | 76% | -13 | -17% |
| Other Income | 23 | 29% | 12 | 15% | -11 | -14% |
| Capital Expenditure | 48 | 62% | 38 | 49% | -10 | -13% |
| Share in earnings of A. & J.V. | 44 | 56% | 35 | 45% | -9 | -12% |
| Int./Invest. In A. & J.V. | 28 | 36% | 19 | 24% | -9 | -12% |
| Working Capital | 10 | 13% | 2 | 3% | -8 | -10% |
| General and Administrative Expense | 23 | 29% | 17 | 22% | -6 | -8% |
| Depreciation | 70 | 90% | 64 | 82% | -6 | -8% |
| Amortization | 67 | 86% | 61 | 78% | -6 | -8% |
| Income from Discontinuous Operations | 8 | 10% | 3 | 4% | -5 | -6% |
| P/L on Disposal of A. & J.V. | 10 | 13% | 5 | 6% | -5 | -6% |
| Operating Exp. | 33 | 42% | 28 | 36% | -5 | -6% |
| PP&E & Intangible Assets | 16 | 21% | 11 | 14% | -5 | -6% |
| Operating Liabilities | 7 | 9% | 2 | 3% | -5 | -6% |

**Table 5**
**Number of Items and Words Before and After IFRS 8**

| | Before Adoption | | After Adoption | | Test of Difference (After-Before) | |
|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median |
| Number of Items | 15.91 | 15.00 | 15.03 | 15.50 | -0.88 | 0.50 |
| Number of Words | 1242.08 | 1143.00 | 1466.22 | 1369.00 | 224.14 | 226.00 |

**Table 6**
**Number of Geographic Areas Reported under IFRS 8 and IAS 14**

**Panel A: Mean and Median number of geographic areas disclosed**

| | **IFRS 8** | **IAS 14** |
|---|---|---|
| Number of firms | 53 | 52 |
| Mean | 4.0 | 4.2 |
| Median | 4.0 | 4.0 |

**Panel B: Distribution of the number of geographic areas disclosed**

| **Number of geographic areas** | **IFRS 8** | **IAS 14** |
|---|---|---|
| One | - | - |
| Two | 5 | 5 |
| Three | 14 | 13 |
| Four | 22 | 19 |
| Five | 6 | 8 |
| Six | 3 | 4 |
| Seven | 1 | 2 |
| > Seven | 2 | 1 |
| **Total** | 53 | 52 |

**Table 7**
**Geographic Segment Definitions**

**Panel A: Enterprise-wide geographic segment definitions under IFRS 8 (n=53)**

| **Individual Countries** | |
|---|---|
| United States | 22 |
| United Kingdom | 19 |
| China | 10 |
| Brazil | 7 |
| France | 6 |
| Germany | 6 |
| Hong Kong, Macau, Taiwan | 6 |
| India | 4 |
| Japan | 4 |
| Netherlands | 4 |
| Australia | 3 |
| Canada | 3 |
| Indonesia | 3 |
| Finland | 2 |
| Portugal | 2 |
| Russia | 2 |
| Other individual countries | 20 |
| **Total** | **123** |

| **Broader Geographic Areas** | |
|---|---|
| Europe | 17 |
| North America | 13 |
| Asia Pacific | 10 |
| Americas | 7 |
| Latin America | 7 |
| Middle East, Africa | 5 |
| Rest of Europe/ Other Europe | 6 |
| Asia, Africa and Australia | 3 |
| Africa | 2 |
| Central America and Caribbean | 2 |
| Middle East, India | 2 |
| Western Europe | 2 |
| Southern Africa | 2 |
| South America | 2 |
| Other geographic areas | 11 |
| Rest of World | 16 |
| **Total** | **107** |

**Panel B: Geographic segment definitions under IAS 14 (n=52)**

| **Individual Countries** | |
|---|---|
| United States | 22 |
| United Kingdom | 19 |
| China | 11 |
| Germany | 5 |
| Switzerland | 5 |
| Brazil | 4 |
| France | 4 |
| India | 4 |
| Australia | 3 |
| Canada | 3 |
| Japan | 3 |
| Austria | 2 |
| Hongkong, Macau, Taiwan | 2 |
| Indonesia | 2 |
| Portugal | 2 |
| Slovenia | 2 |
| South Africa | 2 |
| Other individual countries | 18 |
| **Total** | **113** |

| **Broader Geographic Areas** | |
|---|---|
| Europe | 22 |
| North America | 17 |
| Asia Pacific | 14 |
| Rest of Europe/ Other Europe | 10 |
| Americas | 6 |
| Latin America | 6 |
| Southern Africa | 6 |
| Middle East, Africa | 5 |
| Asia, Africa and Australia | 3 |
| Africa | 3 |
| Central America and Caribbean | 3 |
| Western Europe | 2 |
| South America | 2 |
| Other geographic areas | 11 |
| Rest of World | 15 |
| **Total** | **125** |

**Table 8**
**Items Disclosed for Each Geographic Area under IFRS 8 and IAS 14**

| | **IFRS 8** | **IAS 14** |
|---|---|---|
| Number of firms | 53 | 52 |
| Mean | 3.0 | 3.7 |
| Median | 2.0 | 3.0 |
| | | |
| Revenues | 40 | 36 |
| Total Assets | 19 | 34 |
| Current Assets | 1 | 3 |
| Non-current Assets/ Property Plant and Equipment (PPE) and Intangibles/ Net Fixed Assets | 26 | 17 |
| Additions to PPE and Intangible assets | 1 | 7 |
| EBITDA/ Operating income (loss)/ Earnings/ EBT | 17 | 26 |
| Capital Expenditure | 15 | 34 |
| Depreciation Expense | 5 | 4 |
| Amortization Expense | 3 | 2 |
| Impairment losses | 3 | - |
| Marketing Expenditures | - | 2 |
| General and Administrative Expenses | - | 2 |
| Investment in affiliates/associates and joint ventures | 3 | 4 |
| Income Tax Expense (credit) | - | 2 |
| Liabilities | 7 | 11 |
| Contingent Liabilities | 2 | 2 |