

Determinants of Segment Reporting Disclosures under IFRS 8: the Spanish Case

Abstract

The aim of this paper is to investigate the recent adoption of IFRS 8 by Spanish listed firms and to give an initial detail of segment disclosures under the new standard. Especially, this work tries to evidence the new relation between some of the factors normally associated with segment disclosure practices. IFRS 8 follows the “management approach” on segment identification and a new scenario is expected. Results show that operating segments are mainly based on lines of business, but the geographical segments are associated with higher levels of disaggregation due to “country to country” disclosures. Under IFRS 8 a small portion of the sample still remain as single segment firms and a significant part fails to meet the mandatory Entity-Wide information and not disclose separately most of the items indicated on IFRS 8. Statistical evidence shows significant relation between disclosure score of mandatory items and the factors Size, Profitability, International Listing Status and Main Index. Only Size is positively related. Voluntary disclosure score confirms also a significant relation of Size (positive) and Profitability (negative). Aligned with previous studies, the negative relation of Profitability in both disclosure scores may suggest that firms, under IFRS 8, still hide higher profits through segment aggregation in order to reduce competitive costs.

Pedro Nuno Pardal

Assistant Professor

Polytechnic Institute of Setúbal – Business School (IPS-ESCE))

Campus do IPS, Estefanilha, 2910-503 Setúbal, Portugal (pedro.pardal@esce.ips.pt)

Ana Isabel Morais

Associate Professor

ISCTE – Instituto Universitário de Lisboa UNIDE (ISCTE Business School)

(Ana.Morais@iscte.pt)

Thematic Area: Financial Reporting and International Accounting Standards

Key-words: IFRS 8, Segment Reporting, Operating Segments, Management Approach

1. Introduction

The development of economic groups, due to diversification and internationalization strategies, led to an increasing complexity of firms activities with a strong effect on financial information provided to analysts and investors. Thus, Consolidated Financial Statements could aggregate different sources of risk and income that would not be noticeable to users, without the presentation of disaggregated information by the different segments where firms' developed its activities. In the second half of the last century and due to the increasing difficulty of analysis, primarily for investors, several groups mainly formed by financial analysts and market regulators, demanded for more financial segment disclosures and especially through the development of accounting standards. In a study developed by Knutson (1993) and sponsored by the Association for Investment Management and Research (AIMR), usefulness of segment information was defined as vital, essential, fundamental and indispensable to investment analysis process. Analysts need to know and understand how the various components of a multi-faceted enterprise behave economically. The usefulness of financial segment reporting has been tested by several researches in the last years and confirmed the importance of such information, for example, in improving the ability to forecast firms' future earnings (Herrmann and Thomas, 2000) and as a consequence, in influencing the investors and other users in their decisions. (Berger and Hann, 2003). In the North American standard on segment reporting (Statement of Financial Accounting Standards (SFAS) 131: Disclosures about Segments of an Enterprise and Related Information"), the Financial Accounting Standards Board (FASB) refers in §3, that "the objective of requiring disclosures about segments of an enterprise and related information is to provide information about the different types of business activities in which an enterprise engages and the different economic environments in which it operates to help users of financial statements:

- Better understand the enterprise's performance
- Better assess its prospects for future net cash flows
- Make more informed judgments about the enterprise as a whole".

On the other hand, and despite the benefits of segment information, some entities, criticized the obligation of implementing those disclosures. The main concern relates to competition problems. This concern was observed in studies from Hayes and Lundholm

(1996), Harris (1998) or Botosan and Stanford (2005). However, and as stated in §110 of SFAS 131, other entities referred that, “if a competitive disadvantage exists, it is a consequence of an obligation that enterprises have accepted to gain greater access to capital markets, which gives them certain advantages over nonpublic enterprises and many foreign enterprises”. After the development of the first accounting standards on segment reporting, the debate focused in the efficiency of those standards on improving segment disclosures. Segment reporting standards have been revised or replaced over the last years, and discussion is highlighted in the pre and post periods of adoption.

More recent, disclosure of financial segment information has been a matter of discussion under the convergence project between the International Accounting Standards Board (IASB) and FASB. This project led to the approval, in December 2006, by the IASB, of International Financial Reporting Standard (IFRS) 8 – “Operating Segments” which was set as mandatory for 2009 Financial Statements. This new standard replaced International Accounting Standard (IAS) 14 (as revised in 1997) and improved convergence with SFAS 131. Thus, with IFRS 8, all entities applying IAS/IFRS should now establish their segment reporting structure in accordance with the “Management Approach” which states that segment reporting should be coincident with the way segments are presented in internal information system to the Chief Operating Decision Maker (CODM).

The adoption of "Management Approach" by the IASB induces, among other things that this approach will contribute to more relevant segment information. The IASB believes that implementation of IFRS 8 will result in several improvements on segment reporting, such as, the increase in the number of segments and data available, allowing the users to analyze firms’ “through the eyes of management”, reduce costs for producing segment information, and promote a better consistency between segment information contained in Financial Statements and the information disclosed in the Management Report. In the 21st of November, the European Commission (EC) adopts IFRS 8 issuing its Regulation n° 1358/2007 and listed firms of EU countries, had to adopt in 2009, the new segment report requirements on their Consolidated Financial Statements. Thus, this requirement affected Spanish listed firms that have been adopting revised IAS 14 since 2005.

With mandatory adoption of IFRS 8 being a very recent issue, little is known about segment disclosure under these new rules. Therefore, the main objective of this paper is to detail and characterize segment reporting practices in Spain under the new standard. For this purpose, we analysed segment reporting practices in 2009 Annual Consolidated Financial Statements of Spanish listed firms and results are organized in the following research questions:

- (1) What are the new segment disclosures characteristics under the adoption of IFRS 8?
- (2) Which items were disclosed on firms' segment reporting and what is the level of compliance with the standard?
- (3) Which factors are associated with higher levels of compliance with the standard?

Results show that operating segments are mainly based on lines of business (products and services) and geographical segments represent the major typology in Entity-Wide disclosures. However, under IFRS 8 a small portion of the sample still remains as a single segment firm (no segmental disclosures) and a significant part fails to meet the mandatory Entity-Wide disclosures. As for the disclosure of items per segment, the majority of firms do not disclose separately, a significant part of items indicated on IFRS 8. A small number of firms used the possibility of non-reporting some items, by stating that they were not presented internally to CODM.

The evidence on factor analysis show a significant positive relation between firms' size and the number of items disclosed on their operating segments. A significant and negative relation was observed for profitability and aligned with some previous studies where higher profits are related to more hidden segment information (for example, Botosan and Stanford, 2005). The additionally analysis to voluntary disclosures confirm also the relation with size, but especially with profitability. Thus, this study contributes to the literature by evidence segment reporting practices in Spain under the new IFRS 8 and to extend the analysis on the determinants of segment disclosures. In the past, studies addressing the adoption of different segment reporting standards worked as an important contribution to accounting development and standards revision (Street et al., 2000; Street and Nichols, 2002).

2. IFRS 8 – Operating Segments

IASB new standard on segment reporting replaces IAS 14 and aligns with SFAS 131. The main differences arise from the approach used as basis for identifying segment reporting structure and items to be mandatory disclosed. Revised IAS 14 was based on the so called “Risks & Returns Approach”, where the analysis to the dominant source and nature of firms’ risks and returns should determine if primary and secondary format of segmentation would correspond to business segments (products/services or group of products/services) or geographical segments (§26, revised IAS 14).

The "Management Approach" under IFRS 8, and as in SFAS 131 establishes as fundamental principle that, an entity shall disclose information to enable users of its financial statements to evaluate the nature and financial effects of the business activities in which it engages and the economic environments in which it operate (§1, IFRS 8). For this purpose, segment information disclosed internally to CODM for his decision-making process should be provided also to external users. Thus, IFRS 8 defines as primary source of segmentation the main form used in the internal reporting systems, and named it as "Operating Segments". IFRS 8 also demands secondary segment disclosures, referred as “Entity-Wide Disclosures”, by products or services, geographic areas and major costumers.

In accordance with §5 of IFRS 8, “operating segment is a component of an entity:

- a) That engages in business activities from which it may earn revenues and incur expenses, even if it results from transactions with other components;
- b) Whose operating results are regularly reviewed by the entity’s chief operating decision maker¹ to make decisions about resources to be allocated to the segment and assess its performance; and
- c) For which discrete financial information is available.”

¹ Chief Operating Decision Maker (CODM) should identify a function and not necessarily a manager with a specific title. That function, in accordance with §7, regards the responsibility for allocating resources and assess the performance of the operating segments.

Beside the different approach the revised IAS 14 also indicates segment breakdown used on internal reporting system as evidence to the dominant source and nature of risks and returns. However and due to comparability purposes, internal segmentation could only be used, if the format respects the definitions of business or geographical segments. In IFRS 8, if internal format of segment reporting exist, typology used should be identified as operating segments. Among other aspects, operating segments should now include internal reported segments where the majority of its revenue comes from transactions with other segments and can include items measured differently from the generally accepted accounting principles used on firms' Consolidated Financial Statements.

Other important issue regards the possibility of firms' internal segmentation in having two or more overlapping sets of components for which managers are held responsible. This is the case of matrix form of organization, where for example, there are managers responsible for different products sold in different geographical areas, and also managers responsible for different geographical areas with different products. If operating results of both types of segmentation are reviewed regularly by the chief operating decision maker, then the entity shall decide what are its operating segments based on the core principle described in §1 (§10, IFRS 8).

In IFRS 8 remains the possibility, under certain requirements, of operating segments aggregation, which was one of the most criticized aspects. This criterion was also controversial in SFAS 131 and was considered an invitation for firms' hiding their operating segments (Sanders et al, 1999). After defined the operating segments, IFRS 8 uses the same quantitative thresholds as IAS 14, to analyze if segments are material and should be considered reportable (reported individually).

As for the information to be disclosed by each segment, table 1 shows the main requirements demanded by IFRS 8. In a comparison to the items demanded by IAS 14 for primary form of report, we find that the number of required items is almost the same, but with the further mention of IFRS 8 to the disclosure of revenue and expense from interest and from tax. However, the main difference arises from the fact that items demanded by IAS 14 should always be reported, unlike IFRS 8 requirements, where

most of the items are only disclosed if they are included in the measures of segment profit/loss and assets or are regularly reported to CODM.

Table 2 shows the main requirements of “Entity-Wide Disclosures” demanded by §31-34 of IFRS 8, and what can be considered as a secondary format of report. These disclosures should be provided only if they are not reported in operating segments.

Table 1 – Disclosures for operating segments under IFRS 8

Information Required	Mandatory
- Measure of profit or loss	Yes
- Revenue from external customers - Revenue from other segments - Interest revenue and expense - Depreciation and amortization - Material Items of income and expense - Interest from profit or loss of investments accounted by the equity method - Tax income or expense - Other material non-cash expenses	If included in the measure of segment profit/loss or regularly reported to CODM
- Assets	Yes (in 2009), If regularly reported to CODM (in 2010) ²
- Investments accounted by the equity method - Additions to non-current assets ³	If included in the measure of segment assets or regularly reported to CODM
- Liabilities	If regularly reported to CODM
- Reconciliations from segments totals and firms amount (revenue, profit/loss, assets, liabilities and material items)	If the items were disclosed by segment

² Emend to §23 of IFRS 8 by the Commission Regulation (EU) n°243/2010, that adopted improvements to IFRSs published in April 2009 by the IASB.

³ Other than financial instruments, deferred tax assets, post-employment benefit assets and rights arising under insurance contracts.

Table 2 – Entity-Wide Disclosures under IFRS 8

Information Required	External Revenue	Non-Current Items (footnote 3)
Products and Services	Based on entity financial statements measures.	-
Geographical Areas	Divided by entity country of domicile and all foreign countries	Divided by assets located in entity country of domicile and located in all foreign countries
Major Costumers	If revenue from a single external customer represents 10% or more of entity's revenues	-

3. Literature Review and Research Questions

Over the years, researchers followed closely the discussion surrounding the introduction of the new standards and many studies were developed in order to achieve empirical evidence on the characteristics and effects of their implementation. Street et al. (2000) and Street and Nichols (2002) explored the implementation of SFAS 131 and IAS 14 respectively, and were mentioned by IASB as empirical evidence to compare different segment reporting approaches and support the adoption of the “Management Approach”. IASB refers that SFAS 131 adoption achieved in general better results on segment disclosures practices. In Spain, Labat and Fúnez (2009) developed a study about the characteristics of segment reporting under IAS 14 in its first year of adoption (2005). The research revealed a good level of segment reporting and in line with other countries adoption results.

Previous studies, like Street and Gray (2002), investigated compliance on IAS/IFRS adoptions and identified several factors that could be associated with different levels of compliance, such as firms’ size, listing status, profitability, among others. Some of those determinants of compliance were also tested within IAS 14 and SFAS 131 adoption. For example, firms’ size is normally positively associated with higher disclosures and compliance with segment reporting standards (Prather-Kinsey and Meek, 2004). This stream of investigation also includes the analysis of the factors associated with management choices to establish segment disclosures (Hayes and Lundholm, 1996; Botosan and Stanford, 2005; Berger and Hann, 2007; Hope and Thomas, 2008).

However, due to recent adoption of IFRS 8, little is known about the new reality of segment disclosures and compliance levels. Therefore, and based on IFRS 8 adoption by Spanish listed firms, this study is developed to answer the following questions:

- (1) What are the new segment disclosures characteristics under the adoption of IFRS 8?

IFRS 8 demands the disclosure of operating segments, which should consist in the same typology used for internal decision. Thus, operating segments can be based on business, geographical or other segment classification. Also, under the new standard, firms' should disclose wide segment information, different from the one presented as operating segments. As a starting point, it is important to evidence the characteristics of segment reporting structure presented by Spanish firms and the number of reported segments within the different typologies.

- (2) Which items were disclosed on firms' segment reporting and what is the level of compliance with the standard?

Spanish listed firms under the adoption of IFRS 8 should disclose several items by each operating segment (ex: total assets, total revenue) and in segments presented as "entity-wide disclosures". This analysis is crucial to identify a disclosure score of compliance with the standard.

- (3) Which factors are associated with higher levels of compliance with the standard?

Many factors have been tested as associated with disclosure practices and compliance with IAS/IFRS. Our regression model follows Prather-Kinsey and Meek (2004) methodology, but with some different variables and applied to a different disclosure scenario (IFRS 8). Their model tested the determinants, size, country of domicile, industry, international listing status and auditing company. In our model, additional factors are tested, such as profitability, leverage and IBEX 35 (firms featuring in the main index). Country factor is however removed from the model, since our scope is for Spanish listed firms. These are the main hypothesis test as being related to the level of items disclosed by individual reported segment:

Hypothesis 1: Firms size is positively associated with operating segment disclosure score.

Size is one of the most tested determinants of financial disclosure and most studies identified this factor as positively associated to higher disclosures (Ahmed and Courtis, 1999). However, Prather-Kinsey and Meek (2004) did not find that relation statistically significant.

Hypothesis 2: Firms listed internationally are positively associated with operating segment disclosure score.

Street and Gray (2002) and Prather-Kinsey and Meek (2004) identified a positive and significant association between firms' internationally listing status and higher disclosure practices in general and in segment reporting, respectively.

Hypothesis 3: Firms audited by BIG 4 are positively associated with operating segment disclosure score.

Prather-Kinsey and Meek (2004) identified also a positive and significant association in this hypothesis. They mention several researchers that argue about reputation of big auditing companies being more exposed to bad quality of financing reporting and as a consequence exercising a higher pressure to better disclosures. Ahmed and Courtis (1999) stated that the type of audit company have no significant association with voluntary disclosure, but is significant for mandatory disclosure.

Hypothesis 4: Firms with higher profitability are negatively associated with operating segment disclosure score.

Evidence on the relation between profitability and financial disclosures is mixed (Ahmed and Courtis, 1999; Street and Gray, 2002) and complex (Prencipe, 2004). However, in segment reporting negative relations between measures of profitability and disclosures practices have been found, especially due to competition issues (Harris, 1998; Botosan and Stanford, 2005; Nichols and Street, 2007).

***Hypothesis 5:** Firms with higher leverage are associated with operating segment disclosure score.*

Leverage is many times associated to higher disclosures for firms seeking to obtain more financing. For Prencipe (2004), it is expected that as the rate of leverage increases, firms are more motivated to disclose information in order to reduce agency costs. However, Hope (2003) also refer that due to agency costs, debt can be used for monitoring managers' performance in accordance with shareholders' interests, what could lead to less disclosure score. Aligned with Hope (2003) no prediction sign was consider for the variable.

***Hypothesis 6:** Firms featuring in the index IBEX35 are associated with operating segment disclosure score.*

The introduction of this variable has the objective of controlling the influence of featuring in the main stock index and firm level of disclosure, since this index represents firms with higher performance in home capital markets. Testing this variable will also control for the future use of EU firms, from main indexes, as sample of study. For this purpose firms' are divided in two groups, as firms' features in the main Spanish stock index (IBEX 35), or not.

In addition, determinants will also be tested as associated with a score of voluntary segment disclosure practices identified in the second research question.

4. Empirical Study

4.1. Research Design

Our aim was to analyze segment reporting on listed Spanish firms quoted on regulated markets. Thus, through Worldscope Database, we identified 156 listed firms with their accounts submitted in 2009. Worldscope Database also presents some collected segment information, being however, insufficient to provide evidence in order to answer the research objectives and to a better characterization of IFRS 8 adoption. Therefore, the next step consisted in obtaining the Annual Financial Reports in order to conduct a content analysis on segment reporting disclosures. Annual Financial Reports of 2009 were mainly collected from internet site of Spanish security exchange commission (CNMV - Comisión Nacional del Mercado de Valores) or from firms' corporate site in

alternative. From this process we collect 150 Annual Financial Reports, removing 6 firms from the analysis, since their reports were not available.

In Spain, only firms presenting Consolidated Financial Statements have the obligation to adopt IFRS 8, so we excluded 14 firms that only presented Individual Financial Statements. Additionally 5 firms were excluded because their fiscal year started before 1st of January and therefore didn't have the obligation to adopt IFRS 8. However 2 of these firms decided for its early adoption. Table 3 resumes the process that led to an identified sample of 131 firms for segment disclosure analysis.

Table 3 – Firms excluded from the analysis

Worldscope Database	156 firms
Annual Financial Reports not available	- 6
Firms presenting only Individual Accounts	- 14
Firms with different commercial year	- 5
Firms identified for Research Question 1	131 firms
Firms from Financial Sector	- 32
Firms identified for Research Questions 2 and 3	99 firms

Table 3 also shows that we excluded the financial sector from the analysis of disclosure compliance, in terms of items, and as consequence from the analysis to the factors related to those disclose practices. Later and for research question 2 and 3, the statistical analysis will be based in a total of 99 firms, since financial sector is represented by 32 listed firms (table 4). Some of the independent variables (factors) are items from Financial Statements, which represent different and not comparable measures between financial and non-financial firms. For example, bank activities are based on interest revenues and are presented in segment reporting by the interest margin.

As we can see from table 4, and besides financial firms and the industries of construction and utilities (energy, water, gas, communications) there is a strong distribution of firms through the various industry codes defined by Worldscope Database. Also, due to that fact we analysed industries at a 2 digit code, instead of the 4 digit desegregation, which firms are specified in this database.

Table 4 – Sample Characterization

Industry Group	Firms		Net Sales or Revenue		Operating Profit/Loss	
	No.	%	Total (k€)	Mean (k€)	Total (k€)	Mean (k€)
Worldscope Database ^a						
4300 – Financial	32	24,4	149.776	4.680	20.012	625
2800 – Construction	16	12,2	67.443	4.215	2.309	144
8200 – Utilities	11	8,4	127.284	11.571	24.822	2.257
4600 – Food	6	4,6	7.314	1.219	353	59
6100 – Paper	6	4,6	1.915	319	70	12
4900 – Machinery & Equipment	5	3,8	4.581	916	174	35
3400 – Drugs, Cosmetics & Healthcare	4	3,1	2.115	529	302	76
5200 – Metal Producers	4	3,1	4.652	1.163	-338	-85
6700 – Recreation	4	3,1	2.334	584	198	49
8500 – Miscellaneous	21	16,0	21.975	1.046	3.058	146
Others Industry Groups	22	16,8	76.905	3.496	1.645	75
Totals	131	100,0%	466.296	3.560	52.604	402

^a Major representative 2 digit industry codes from Worldscope Database.

The process of collecting segment data from Annual Financial Reports and especially from the Notes was conducted through a MS Excel Sheet containing the list of IFRS 8 requirements and open fields for the registration of any additional disclosures or relevant observations. After treating segment information (including total number of disclosed segments and disclosure scores of items required), financial data to characterize the sample and to be used as measures of the determinants to test, was added to the same MS Excel Sheet. For answering research questions 1 and 2 we used descriptive statistical measures and for research question 3 a multiple linear regression model was developed to evidence the statistical relation between the proposed determinants and the number of items disclosed.

4.2. Segment reporting format under IFRS 8 adoption

First research question has the objective to evidence the main characteristics of segment disclosures practices by Spanish listed firms, exploring how segmentation was defined and organized. For the 131 firms analyzed, segment reporting and related observations can be found in the Notes to Financial Statements, being normally presented in the first (66 firms between note 2 and 9) or in the last (55 firms between note 17 and 52) notes⁴. As we can see from table 5, other 10 firms' referred to be Single Segment (SS) or were

⁴ One other firm presented entire financial statements by segment outside the Notes statement.

considered that way by not disclosing any information. The majority of firms mention the adoption of IFRS 8 and the use of internal report of segmentation as basis, but most of them affirmed that no significant impact was verified. Only 20 firms (15,3%) referred directly to the impact of IFRS 8 (16 firms informed that the adoption of the new standard resulted in a restatement of information from previous years). Table 5 shows the frequency and type of segments related to the operating segments format and by the main industry codes. Segment disclosures of Spanish listed firms are mainly based on Lines Of Business (LOB) with a percentage of 71,0% (or 78,6% if we consider the Matrix form of segmentation). As LOB, we defined the segments aligned with individual products or services or groups of products or services. In the majority of firms, the internal reporting system is based on group's structure where the entities that compose it, are normally grouped by lines of similar products or services. GEO represents the disclosure of information by geographical areas and Matrix format represents a firm that disclosed at a first level the same information for LOB and GEO. Despite of firms' indication to which are considered operating segments in relation to the core principle of IFRS 8, we consider both typologies (LOB and GEO) as operating segments, since firms maintained the same level of disclosure for the two in the called Matrix format. For example in the Utilities industry we can say that the real total of firms disclosing information by LOB is 8 (3 plus 5 from the Matrix format).

Table 5 – Operating Segments Format

Industry Group	LOB	GEO	Matrix (LOB & GEO)	SS	Total	%
4300 – Financial	24	2	0	6	32	24,4
2800 – Construction	15	1	0	0	16	12,2
8200 – Utilities	3	2	5	1	11	8,4
4600 – Food	4	2	0	0	6	4,6
6100 – Paper	6	0	0	0	6	4,6
4900 – Machinery & Equipment	4	1	0	0	5	3,8
Others Industry Groups	37	10	5	3	55	42,0
Total No. Firms	93 (71,0%)	18 (13,7%)	10 (7,6%)	10 (7,6%)	131	100%
Total No. of Disclosures	93 (76,9%)	18 (14,9%)	10 (8,3%)	-	121	100%

For geographical disclosures, in the operating segments format, we identified 28 firms considering the Matrix format in a total percentage of 21,3%. The sample included also 10 non-disclosures what are identified as single segment firms. These results are similar

to previous studies on other standards (Street et al, 2000; Street and Nichols, 2002; or Labat and Fúnez, 2009).

As a result of operating segments characteristics, Entity-Wide disclosures are mainly based on geographical areas (59,5% not considering the effect of Single Segment firms). Table 6 shows the complete scenario of Entity-Wide basis of information and evidence a significant portion, of non-single segment firms, without disclosures on this secondary format (33,1%), even if IFRS 8 set this disclosures as mandatory. Comparing with Labat and Fúnez, (2009) results of IAS 14 adoption in Spain (21%) this study shows a larger percentage of non-disclosures and this problem should be an enforcement target by regulators in order to improve disclosures under IFRS 8 application.

Table 6 – Entity-Wide Disclosures

Typology	Frequency	% (131 firms)	% (121 firms)
Products or Services	18	13,7	13,7
Geographical Areas	72	55,0	59,5
Costumers Information	25	19,1	20,6
Non-Disclosure Firms	40	30,5	33,1
Single Segment (SS)	10	7,6	-

Table 7 – Number of Reported Segments

Typology	Operating Segments		Entity-Wide		Totals	
	No.	%	No.	%	No.	%
LOB	363	41,1	77	8,7	440	49,8
GEO	112	12,7	331	37,5	443	50,2
Totals	475	53,8	408	46,2	883	100,0
Mean (121 firms)	3,92	-	3,37	-	7,30	-
Mean (131 firms)	3,63	-	3,11	-	6,74	-

The resume on the number of reported segment by each format and typology is shown in table 7 and the results indicate that, despite of the low number of firms disclosing segments in the Entity-Wide format, the disclosure firms showed a large segment disaggregation, especially by geographical areas and associated to country-by-country disclosures. In the main format of report the average is 3,92 segments per firm, what is

similar but yet lower to IAS 14 adoption (mean of 4,04) in Street and Nichols (2002). Also in Spain, Labat and Fúnez (2009) showed a higher result for IAS 14, with an average of 4,09 segments by firm. However, results may be influenced by our decision to remove most of the “other” segments, whenever they included non-allocated items, adjustments or eliminations. Future analysis to IAS 14 using the same basis would certainly enhance the comparison results. Spanish firms disclosed a total of 883 segments and the combination of the two formats of report resulted in an average of 7,3 segments per firm or 6,74 when single segment firms are included in the analysis.

4.3. Disclosures by individually segment under IFRS 8

As detailed in tables 1 and 2, IFRS 8 requires the disclosure of several items per segment in both formats. In this section we analyze the disclosure of those requirements and resume it on table 8. For this analysis and by the reasons presented before we excluded the financial firms and worked with a sample of 99 firms (including 4 single segment firms). Table 8 shows the frequency report of each analyzed item within the 95 firms that disclosed information. The column “Not to CODM” identifies the effect of items not disclosed, but justified by firms in the Notes with the fact that they did not include those items in the internal reporting to CODM. This is a real concern of many entities regarding the use of the “Management Approach” and some believe that managers could look to this criterion as a form to avoid segment disclosures to the exterior. Two measures were disclosed by all firms, namely profit or loss and external revenue. However, external revenue was not clearly identified as such, and in some of those cases could include the inter-segment revenue. Along with assets, liabilities and depreciation were the most disclosed items. On the other hand, tax and investments accounted by the equity method, were the items less disclosed. The total column is the measure more closely to compliance, since IFRS 8 permits that most items could be dropped from external segment reporting due to the fact seen before and presented on column “Not to CODM”. The column “Disclosure” represents better the extension of items disclosed and the results shown that 807 items were disclosed on operating segments format, representing an average of 8,5 items per segment. Also is important to notice that the reconciliations requirements were not included in this particularly analysis.

Only 1 firm disclosed the 13 items of table 8 and the most frequent number of items disclosed was 9 (17 firms), followed by 11 (15 firms), 10 (14 firms) and 8 (13 firms). No firm disclosed less than 3 items.

Table 8 – Frequencies of Disclosure for each Item on Operating Segments

	Items Required	Disclosure	Not to CODM	Total	%
1	Profit or Loss Measure	95	0	95	100,0
2	External Revenue	95	0	95	100,0
3	Inter-Segment Revenue	47	0	47	49,5
4	Interest Revenue and Expense	53	8	61	64,2
5	Depreciation and Amortization	80	1	81	85,3
6	Material Items of Income and Expense	47	0	47	49,5
7	Interest by Equity Method	44	1	45	47,4
8	Tax Income or Expense	35	9	44	46,3
9	Other Material Non-Cash Expense	51	1	52	54,7
10	Assets	85	1	86	90,5
11	Investments (Equity Method)	34	0	34	35,8
12	Additions to Non-Current Assets	59	1	60	63,2
13	Liabilities	82	3	85	89,5
Total of Disclosure Firms		-	-	95	100,0
Single Segment Firms		-	-	4	-
Total of Disclosed Items		807	25	832	-
Mean of Disclosed Items (95 firms)		8,50	0,26	8,76	-

As for the Entity-Wide information, there are low disclosures by products and services, since most line of business segments were considered in the main format, and therefore revenue was the measure most disclosed with only 13 observations. For mandatory Entity-Wide geographical information, the value of external revenue was disclosed by 39 firms and non-current assets by 14 firms. However, two measures required by IAS 14 (total assets or investment in non-current assets) were disclosed by 56 firms. This is important evidence that some firms maintained their reporting structures and ignored the specific requirements of IFRS 8.

Voluntary disclosures were also observed and divided in 4 groups: (1) different measures of profit/loss; (2) disaggregated asset items; (3) disaggregated liabilities items; and (4) disclosure of indicators or ratios. In the third research question we analyze, in

addition, the possible relation between the proposed determinants and a voluntary disclosure score based on these 4 groups.

4.4. Determinants of IFRS 8 disclosure score

As we defined before, several studies in financial accounting and also in financial segment reporting investigated the determinants or factors associated with disclosure practices. Thus, and in accordance with the objective of research question 3 we estimate a model for the factors associated to the level of items disclosed in operating segments under the mandatory adoption of IFRS 8 by Spanish listed companies. Additionally, we apply the same variables to a score of voluntary disclosures presented by firms' in the operating segments format. The OLS regression is performed considering all variables, but also results from an alternative Stepwise regression are shown. Although, some of the variables in the model are different, regression analysis follows the methodology used by Prather-Kinsey and Meek (2004). Our model contains 3 common variables which are size, international listing status and audit company. We also tested industry codes, even if it is not part of the presented model and for the reasons explained later. In addition to Prather-Kinsey and Meek (2004) model we add profitability, leverage and IBEX35 as determinants of segment disclosure. Since our study is only about Spanish listed firms we did not use the variable country. Like industry, multi-nationality (weight of internationalization) was also marginally tested.

The regression model on the determinants of segment disclosure compliance is represented by the following equation:

$$(1) DCS_i = \alpha_i + \beta_1 SIZE_i + \beta_2 LIST_i + \beta_3 AUDIT_i + \beta_4 ROA_i + \beta_5 LEV_i + \beta_6 IBEX_i + \varepsilon_i$$

Where the dependent variable is:

DCS_i – Disclosure Compliance Score of firm i .

Similar to Prather-Kinsey and Meek (2004), DSC corresponds to a score of disclosure in accordance with IFRS 8 requirements for operating segments. This variable will be measured dividing the total of items reported by the total of items required by the standard. In the previous section, the disclosure compliance score was analysed considering (SCS_1) or not (SCS_2) as an item disclosed, the reference to that item as non-included in internal report to CODM.

Independent variables were measured with the following criterions:

SIZE_i – Size of firm *i* is measured by the logarithm of net sales.

LIST_i – “Dummy” variable that assumes the value 1 if firm *i* is listed internationally and 0 otherwise.

AUDIT_i – “Dummy” variable that assumes the value 1 if firm *i* is audited by the major audit firms (BIG 4) and 0 otherwise.

ROA_i – Instead of using net income to measure profitability of a firm, we use the “Return On Assets” ratio. As we seen before, this is a measure normally used in segment reporting research for testing competition problems.

LEV_i – Leverage of firm *i* is measured by the ratio driven from total liabilities divided by total assets.

IBEX_i – “Dummy” variable that assumes the value 1 if firm *i* featured in IBEX 35 index and 0 otherwise.

Table 9 show the results for the disclosure score, considering the reference noted before, as an item disclosed. Person correlation tests did not evidence problem of multicollinearity since all values are below 0,9. The higher correlation verified, is between the variables size and IBEX with the value of 0,643. Also through the analysis of VIF (Variance Inflation Factor) we can observe an absence of higher correlation between variables, what happens when VIF is superior to 10.

Table 9 – SCS_1 Regression Results

	Un.Coef.		Stand.Coef.			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-0,404	0,186		-2,171	0,032		
SIZE	0,196	0,035	0,706	5,560	0,000	0,467	2,141
LIST	-0,179	0,080	-0,209	-2,244	0,027	0,865	1,157
AUDIT	0,087	0,077	0,108	1,133	0,260	0,824	1,214
ROA	-0,007	0,003	-0,263	-2,728	0,008	0,810	1,235
LEV	-0,002	0,001	-0,143	-1,452	0,150	0,780	1,282
IBEX	-0,140	0,058	-0,274	-2,416	0,018	0,583	1,714
Adjusted R2		0,263					
F		6,826					
Sig.		0,000					

Regression results for SCS_1 confirm hypothesis 1 (Size) and 4 (Profitability) and are statistically significant at a level of 0,05. Thus, size is a determinant positively and significantly related to segment disclosure score of Spanish listed firms. This result is aligned with prior assumptions and in comparison with Prather-Kinsey and Meek (2004) model, significance here, was verified. Hypothesis 4 is also confirmed and

statistically significant ($p=0,008$), therefore in our model profitability (measured by ROA) is a factor negatively related to higher disclosure practices and supports previous studies that observed the same relation (Botosan and Stanford, 2005; Nichols and Street, 2007). This result could indicate that competitive disadvantages, in certain cases, still prevail over the indication of lower company risk to the market (Prencipe, 2004). Tests also evidence significant negative relations between disclosure score and the determinants, international listing status and featuring on Spanish main index. The unexpected negative relation of international listing status could result from the low number of Spanish firms listed internationally. No statistically evidence supports hypotheses 3 (audit company) and 5 (leverage).

Overall, the model for SCS_1 is explained by the independent variables in 26,3% (adjusted R^2). The F-test from the analysis of variance (ANOVA) is significant at 0,000, what indicates that the model have explanatory power, since at least one beta is different from zero. In the alternative Stepwise regression, the results confirmed full regression for SCS_1, and 4 variables (Size ($p=0,000$), international listing status ($p=0,011$), IBEX 35 ($p=0,018$), profitability ($p=0,029$)) entered the model. In Stepwise regression adjusted R^2 is 24,8%.

The regression for SCS_2 present similar results (adjusted R^2 of 22,4%), with size ($p=0,000$), profitability ($p=0,007$), international listing status ($p=0,019$) and IBEX 35 ($p=0,029$), being again statistically significant.

Finally, we applied the model, without modification of the independent variables, to the level of voluntary disclosures. The model is represented in the following equation:

$$(2) \quad VS_{DS_i} = \alpha_i + \beta_1 SIZE_i + \beta_2 LIST_i + \beta_3 AUDIT_i + \beta_4 ROA_i + \beta_5 LEV_i + \beta_6 IBEX_i + \varepsilon_i$$

Where the dependent variable is:

VS_{DS_i} – Voluntary Segment Disclosure Score of firm i .

Voluntary score is calculated dividing the number of voluntary categories the firm disclose information by the 4 categories identified in previous section.

Table 10 – VSDS Regression Results

	Un.Coef.		Stand.Coef.			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-0,545	0,276		-1,971	0,052		
SIZE	0,172	0,052	0,446	3,288	0,001	0,467	2,141
LIST	-0,168	0,118	-0,142	-1,420	0,159	0,865	1,157
AUDIT	0,004	0,114	-0,004	-0,035	0,972	0,824	1,214
ROA	-0,014	0,004	-0,350	-3,392	0,001	0,810	1,235
LEV	0,000	0,002	0,012	-0,119	0,906	0,780	1,282
IBEX	-0,073	0,086	-0,102	-0,841	0,402	0,583	1,714
Adjusted R2		0,157					
F		4,045					
Sig.		0,001					

Results from the application of the model to voluntary disclosure score are, in general, less relevant. The model has an explanatory power of 15,7%, and through F-test still is significant at a level of 0,05.

However, the result for profitability (ROA) is more significant and is an important evidence of how discretionary choices of disclosure could be conditioned in firms presenting higher investment returns. Size is also statistically and positively related to voluntary segment disclosures and for all the other variables no significant statistical relation was found.

5. Conclusions and future research

In this paper we have proposed an empirical analysis to the first year of IFRS 8 application using Spanish listed firms. Also, was an objective, the extension of the factors related to segment disclosures and especially tested in a new regulatory scenario. The results showed that almost 79% of the Spanish listed firms have their operating segments based on lines of business. Due to that fact, Entity-Wide disclosures are essentially based on geographical areas. However, when geographic segments are the basis of segmentation a larger set of individually segments are disclosed, normally due to country-by-country disclosure. A small portion of firms (7,6%) did not present any segment information and some indicated that they were single-segment firms.

The average number of segments in the primary format is 3,92 operating segments by firm, what is close to disclosure levels identified by other authors. However, there is no

information of how the “other” segment was treated, what could lead to a different score. Only 1 firm disclosed the 13 items mentioned on table 8 for operating segments and only profit/loss and external revenue were the items disclosed by all firms. The average disclosure was 8,5 items per segment, due to a significant part of the sample with poor disclosure score. The controversial criterions of “Management Approach” are far from being put aside.

As for the determinants of disclosure compliance, the results evidence that size is statistically related to higher levels of disclosure and that higher profitability is statistically related to lower disclosure scores (also on voluntary disclosures). These results may evidence that under IFRS 8, firms still hide higher profits through segment aggregation in order to reduce competitive costs.

For future research, the directly comparison with the last year of IAS 14 would improve the evidence of IFRS 8 effect on segment reporting. The extension of sample would also be relevant for country analysis and for a higher robustness of the determinants of the model.

Overall, we think this research contributes to the literature by showing the characteristics of the recent adoption of IFRS 8 by Spanish listed firms and for testing new determinants of segment disclosure in a new scenario under the “Management Approach”.

References

- Ahmed, K. and J.K. Courtis (1999), Associations between Corporate Characteristics and Disclosure Levels in Annual Reports: A Meta-Analysis, *British Accounting Review* 31, 35-61.
- Berger, P.G. and R. Hann (2003), The Impact of SFAS N°131 on Information and Monitoring, *Journal of Accounting Research* 41(2), 163-223.
- Berger, P.G. and R. Hann (2007), Segment Profitability and the Proprietary and Agency Costs of Disclosure, *The Accounting Review* 82(4), 869-906.
- Botosan, C.A. and M. Stanford (2005), Managers' Motives to Withhold Segment Disclosures and the Effect of SFAS No.131 on Analysts' Information Environment, *The Accounting Review* 80(3), 751-771.
- European Commission (2007a), Endorsement of IFRS 8 Operating Segments: Analysis of Potential Impact - Report, 3 September 2007, Brussels.
- European Commission (2007b), Regulation (EC) n°1358/2007 of 21 November 2007, amending Regulation n°1725/2003.
- European Union (2010), Commission Regulation (EU) n°243/2010 of 23 March 2010, amending Regulation n°1126/2008.
- Financial Accounting Standards Board (1997), SFAS 131: Disclosures about Segments of an Enterprise and Related Information.
- Harris, M.S. (1998), The Association Between Competition and Managers' Business Segment Reporting Decisions, *Journal of Accounting Research* 36(1), 111-128.
- Hayes, R. and R. Lundholm (1996), Segment Reporting to the Capital Market in the Presence of a Competitor, *Journal of Accounting Research* 34(2), 261-279.
- Hermann, D. and W. Thomas (2000), A Model of Forecast Precision Using Segment Disclosures: Implications for SFAS No. 131, *Journal of International Accounting, Auditing & Taxation* 9(1), 1-18.
- Hope, O. (2003), Firm-level Disclosures and the Relative Roles of Culture and Legal Origin, *Journal of International Financial Management and Accounting* 14(3), 218-248.
- Hope, O. and W. Thomas (2008), Managerial Empire building and Firm Disclosure, *Journal of Accounting Research*, 46(3), 591-626.

International Accounting Standards Board (1997), IAS 14 (Revised): Segment Reporting.

International Accounting Standards Board (2006), IFRS 8: Operating Segments.

Knutson, P.H. (1993), *Financial Reporting in the 1990s and Beyond*, Association for Investment Management and Research.

Labat, B. and D. Fúnez (2009), *Análisis de la Información Segmentada en España: Efectos de la Primera Aplicación de la NIC 14*, XV Congreso de AECA, Valladolid.

Nichols, N.B. and D. L. Street (2007), *The Relationship Between Competition and Business Segment Reporting Decisions under the Management Approach of IAS 14 Revised*, *Journal of International Accounting, Auditing & Taxation* 16(1), 51-68.

Prather-Kinsey, J. and G. Meek (2004), *The Effect of Revised IAS 14 on Segment Reporting by IAS Companies*, *European Accounting Review* 13(2), 213-234.

Prencipe A. (2004), *Proprietary Costs and Determinants of Voluntary Segment Disclosure: Evidence from Italian Listed Companies*, *European Accounting Review* 13(2), 309-340.

Sanders, J., S. Alexander and S. Clark (1999), *New Segment Reporting. Is It Working?*, *Strategic Finance*, Vol. 81 n°6, 35-38.

Street, D.L., N.B. Nichols and S.J. Gray (2000), *Segment Disclosures under SFAS n°131: Has Business Segment Reporting Improved?*, *Accounting Horizons* 14(3), 259-285.

Street, D.L. and N.B. Nichols (2002), *LOB and Geographic Segment Disclosures: An Analysis of the Impact of IAS 14 Revised*, *Journal of International Accounting, Auditing & Taxation* 11(1), 91-113.

Street, D.L. and S.J. Gray (2002), *Factors Influencing the Extent of Corporate Compliance with International Accounting Standards: summary of a research monograph*, *Journal of International Accounting, Auditing & Taxation* 11(1), 51-76.