

A Work Project, presented as part of the requirements for the Award of a Masters
Degree in Management from the NOVA School of Business and Economics.

“Recognising, Measuring and Disclosing Intangible Assets under IAS 38 and IFRIC 12:
Evidence from the Portuguese Listed Companies”

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Abstract

This research analyses the recognition, measurement and disclosure of intangible assets in Portuguese listed companies for the period 2011-2012, with emphasis in the energy business. The findings suggest that reporting intangible assets according to IAS 38 shows distortions in recognition, lack of information about measurement, and issues in disclosure levels. The size of the firm, the weight of intangibles on total assets and the classes of intangibles are positively correlated with the Intangibles Disclosure Index designed during the research. Furthermore, in the energy regulated sector, reporting according to IFRIC 12 completely changed the balance sheet profile namely regarding license concessions.

1. Introduction

The value-driver of growth for the companies has changed from the traditional tangible assets to the intangible assets (Capasso 2004; Volkov and Garanina, 2008). Therefore, the issue of the recognition, measurement and disclosure of what should be reported as an intangible asset comes to the field, but the feasibility of the concept does not match completely the standardised denomination imposed by the accounting regulation.

The growing importance of intangibles justifies the need to improve the information disclosed in the financial reports within the International Accounting Standard 38 (*IAS 38 Intangible Assets*).

As intangibles change and new types, such as concession licenses emerge, new literature is published, and the attention of the International Financial Reporting Interpretations Committee was drawn and the *IFRIC 12 Service Concession Arrangements* was issued, which complements the IAS 38. This class of intangibles is of great relevance in the energy industry¹

¹ From the total assets in this industry over 27.4% are concession licenses in the year 2012. The weight of energy concession licenses over the total assets of all companies comprises 14.5%. – Consolidated Annual Reports, CMVM

The variety and growing importance of intangible assets justifies this work project. It aims at providing evidence about financial reporting of intangible assets. Based on financial reports prepared according to International Accounting Standards Board (IASB) regulation, this research add to the literature evidence about the recognition, measurement and disclosures of intangible assets of Portuguese non-financial companies listed in the Euronext Lisbon. Intangibles in the energy sector where license concessions, a specific type of intangibles, are of paramount importance is analysed in deeper detail.

After this introduction, this Work Project proceeds as follows. Section 2 provides the key definitions to understand this Work Project and describes the regulatory framework of financial reporting of intangible assets, namely IAS 38 and IFRIC 12. Section 3 provides the literature review which helped to design the research. Section 4 describes the methodology, sample, and data and sets the research questions. Section 5 discusses the results and finally Section 6 concludes with the contribution, summary of findings, limitations, and possible future research.

2. Theoretical and Regulatory Framework

Intangible assets are “identifiable non monetary assets without physical substance” (Epstein and Jermakowicz, 2010) which satisfy the following requirements: recognition, control, reliable measurement and existence of future economic benefits (IAS 38–Intangible Assets, §9 and §10). Intangibles comprise two types of assets, namely identifiable and non-identifiable assets. Examples of the former are copyrights, patents, customer lists, brand names and trade names (Epstein and Jermakowicz, 2010). The latter category comprises the goodwill which is out of the scope of this research project.

A specific type of intangible assets are the service concessions. According to IFRIC 12, *a service concession arrangements exist when a company (the concession operator) agrees with another entity (the concession provider) to provide services that give the public access to major economic and social facilities* (IFRIC 12 – Service Concessions). The IAS 38 contains the key definition relevant to intangibles financial reporting. This regulatory framework includes, directions to harmonise accounting and avoid huge discrepancies in accounting systems and financial reporting², the directions to harmonize their accounting standards in order to avoid huge discrepancies in accounting systems and subsequent financial reporting.

Not all intangible resources are integrated in this regulation as, despite being intangible they do not meet the identifiability criteria stated in the IAS (IAS 38, §10). Furthermore, the asset needs to arise from contractual (or other legal) rights at the same time as considered separable (IAS 38, §12).

Apart from the identifiability criteria, it is also necessary to verify if the firm controls the asset so as to obtain the future economic benefits from its use (IAS 38 §13 and §17). After all these verifications, one may recognize that intangible resource as an intangible asset (fulfilment of the conditions in the definition, IAS 38 §18). Yet, different criteria of recognition arise by type of intangible and how they should be initially measured (IAS 38 §18, 19). Figure 1 summarises the recognition criteria and respective initial Measurement present as set in the IAS 38.

While some identified intangibles are easily framed in the accounting regulation, others are not as easily to frame, such as the human capital. The latter are neither directly recognised nor measured in the financial statements (Frederick, 2009).

² Regulation no. 1606/2002 from the European Parliament and from The Council (July 2002)

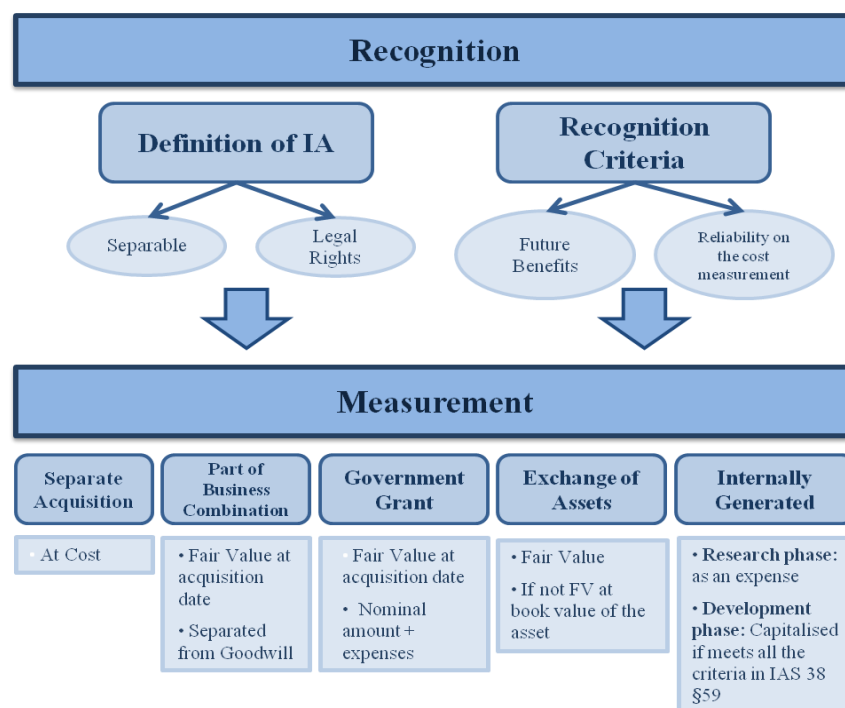


Figure 1 - Recognition and Measurement of Intangible Assets

According to IAS 38, intangibles asset shall be primarily measured at *initial cost* (IAS 38 §24). Nevertheless, there are some peculiarities regarding certain types of intangible assets such as the *Research and Development (R&D)*, whereas the *research phase*, as the future economic benefit requirement is not determined yet, must be expensed and may not be capitalized (IAS 38, §54 and §55), in opposition to the development phase that may be capitalised if it fulfils several conditions (IAS 38 §57)³

Cost Model is the only possible model for initial valuation. After the initial recognition, if the cost model is used *the value is carried at cost less accumulated amortisation and impairment losses* (IAS 38 §74). On the other hand, if the Revaluation Model is the one used, Intangible Assets are *carried at its fair value⁴ in a regular basis less subsequent accumulated amortization and subsequent accumulated impairment losses* (IAS 38,

³ Adequate resources to complete, reliable development expenditure measurement, how it will generate future economic benefits, ability to use or sell, intention of use or sell, technical feasibility of completion.

⁴ The *fair value* is the “amount that would be obtained for an asset in an arm’s length exchange transaction between knowledgeable willing parties” (Epstein and Jermakowicz, 2010, p.362).

§75). Revaluated assets should be measured in reference to an active market⁵ and it is up to the entities to choose the accounting policy (cost or revaluation model).

The useful life⁶ can be either finite or indefinite life (IAS 38, §88). Intangible assets with finite life may be amortized regarding the pattern of consumption of the future economic benefits, which if not possible to determine, the straight line method is the recommended method (IAS 38, §97). The latter may not be amortized but should be regularly tested for impairment to check if events and circumstances continue to support the condition of the asset (IAS 38, §109). All intangibles shall be evaluated periodically in order to notice any changes regarding their useful economic life. Amortization and impairment should be recognized in the profit and loss statement of the company.

Figure 2 details the differences in intangibles with definite and indefinite life.

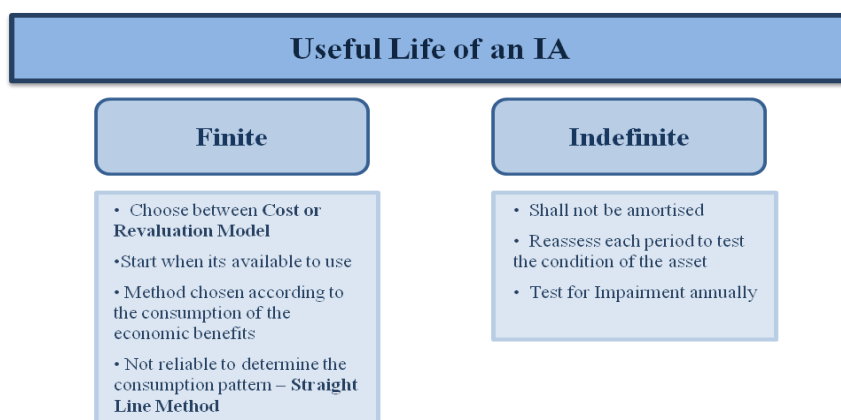


Figure 2 - Useful Life of Intangible Assets

Additional regulation related with intangibles (concession licenses), is IFRIC 12 – Service Concession Arrangements⁷. IFRIC 12 refers to the construction and maintenance of infrastructures for public service by private institutions. In the

⁵ An Active market shall trade homogeneous items, have willing buyers and sellers and transparent prices.

⁶ Useful Life is “either the period of time in which an asset is expected to be in use for the entity or the number of production expected to be obtained from the asset by the entity” (Epstein and Jermakowicz, 2010, p.362)

⁷ IFRIC 12 is effective for annual periods beginning on or after 1 January 2008, but earlier application was permitted.

conception of the contract, a grantor and an operator are established as the interested parts of the business.

The grantor normally is assumed to be a public organisation or institution or even a regulator which *grants the arrangement to an operator*, whereas the latter has the role to manage the services and the infrastructures at least partially (IFRIC 12, §3).

The recognition of this infrastructure *must not be considered property, plant and equipment* of the operator since *the latter does not have the right to control its use* (IFRIC 12, §11).

The operator only manages the structure in order to fulfil its purpose of providing a public service, as well as has the obligation to construct and/or upgrade the infrastructure for a specified period of time. This research only considers **the service concessions recognised as intangible assets**, Figure 3 shows a summary of the intangible assets model⁸.

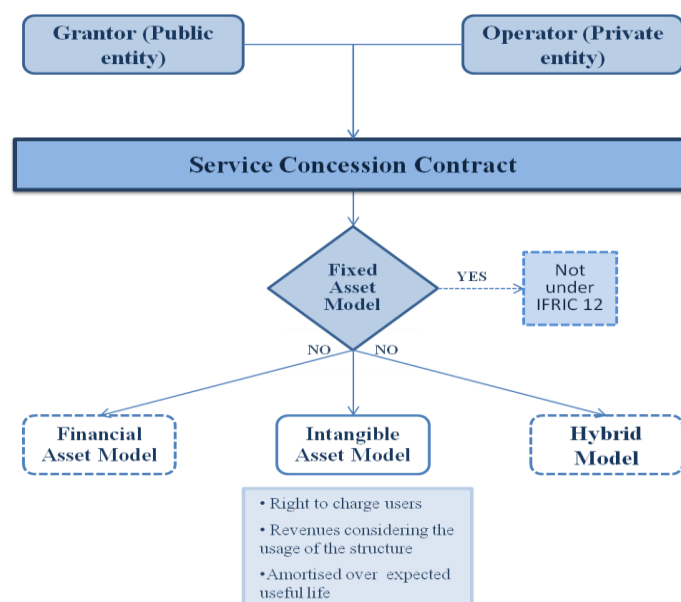


Figure 3 - IFRIC 12

⁸ IFRIC 12 allows for three models of assets measurement, as follows: the intangible asset, the financial asset, and the hybrid models. This Working Project, considers only the intangible asset model.

The operator recognises the license as an intangible asset in the sense that he has the right to charge the user for the use of the structure. However, the cash flows originated by this contract will be restricted by the usage and the directions defined by the regulator or public entity (IFRIC 12 §17). IFRIC 12 directs to IAS 38 when referring to the subsequent measurement of this type of licenses as intangible assets.

3. Literature Review

Intangible assets are not anymore regarded as an accounting residual value but are crucial point, present in the current industries, as holder of substantial economic benefits (Frederick, 2009). While some identified intangibles are easily framed in the accounting regulation, others are not as easily to frame, i.e. the human capital. The latter creates drawbacks in the sense that it is not directly recognised and measured in the financial statements (Frederick, 2009).

The growing importance of intangible assets highlights the issues of recognition and measurement of intangibles. The values reported in the balance sheets might not be detailed and transparent enough to inform the investors and the market about the “real value” of the company. Given that a great deal of the future economic benefits of those companies depends on that type of assets, a problem of transparency arises. The valuation of the entities were jeopardised and hampered due to lack of detail, substance and clearness of the asset which needed a precise evaluation (Penman, 2009).

Some intangibles are not recognised and measured anymore due to the uncertainty of their nature, such as clients’ portfolio and market shares. This combined with the characteristics of IAS 38 regarding R&D, lead to a decrease in the value of the intangibles of 48 Portuguese listed companies (Sá, 2010). The same happens with some client portfolios which were over evaluating the intangibles of companies and according

to the new normative should not be recognised (Correia, 2011). Furthermore, the entities did not disclose all the required information in notes to the financial statements (Sá, 2010), which IAS 38 explicitly states as mandatory and essential.

According to IAS 38, two different models may be used in the measurement of intangible assets namely the cost or the revaluation model. However, almost no reference is made about the model of measurement used by the firms and the reasons behind their choice. Thus, it is important to analyse if there are difficulties for using the latter model by the Portuguese companies, namely if assets do not fit any market, and whether a reliable measurement is possible or not (Frederick, 2009)

Disclosures about Intangible Assets in the financial reports have been a controversial topic. The importance of intangibles as a major source of future economic benefits, made firms rethink the way they were disclosing information to the public. As the economic reality becomes more and more complex (Silva, 2012), the stakeholders' need to obtain concise and transparent information emerges. Furthermore, non compliance with the disclosures requirements may originate the companies to incur in adjustment costs, hazardous not only for the firm's results, but also for the firm's image among the stakeholders (Silva, 2012). Therefore, *due to the increase of intangible assets* justifies the aim of *picturing the business reality* through disclosing theory in the financial statements in order to promote the organisational responsibility as well as disclosing clear information to the industry's participants (Silva, 2012; Rodrigues, 2006).

Hence, the financial reporting of Intangible Assets, both the recognition and initial measurement combined with the subsequent measurement models and the disclosure analysis constitute a unique analysis which adds information to the diverse fields of the study of Intangible Assets. Furthermore, this work project contributes to the literature of

financial reporting in Portugal by adding the analysis of the specific case of license concession in the energy industry, more precisely with the case of company REN⁹ which to the best of our knowledge was never done before.

4. Methodology

This research aims at getting insight into financial reporting of intangibles, excluding goodwill, by the Portuguese firms listed in the Euronext Lisbon, namely about recognition issues, to understand if the companies are using the cost or the revaluation model for the subsequent measurement, to comprehend the degree of disclosure and which variables it correlates with. Moreover, this project analyses intangibles in the energy industry specially license concessions, being REN a specific case analysed.

The main research questions to be answered are as follows.

RQ1: Are the companies initially recognising the intangible assets according with the regulation (IAS 38)?

RQ2: Are both the subsequent measurement models, Cost and Revaluation, employed?

RQ3: How are the companies disclosing the intangibles?

RQ4.1: Is the size of the firm correlated with the Disclosure Index?

RQ4.2: Is the weight of intangible assets correlated with the Disclosure Index?

RQ4.3: Are the classes of intangible assets correlated with the Disclosure Index?

RQ5: How does REN recognise, measure and disclose the concession licenses as part of energy industry?

To answer to this research questions, the universe of the 49 Portuguese listed companies in the Euronext Lisbon Stock Exchange was selected. The data was retrieved from the consolidated annual reports of the companies, available at the Stock Market Authority

⁹ REN – Redes Energéticas Nacionais, private owned company operating in the energy industry more precisely in the management and transportation of energy (concessions of Electricity and Natural Gas). In Portugal it holds a position of natural monopoly in these two fields as the transportation was disaggregated from the generation and distribution of energy segments.

website (*Comissão do Mercado de Valores Mobiliário*, CMVM). These reports are prepared as required by European and domestic regulation. Data from the two most recent financial reporting periods was analysed (2011 and 2012).

Structuring the sample

The first step to evaluate the Intangible Assets in the universe (N) was to take out firms which do not have significant values and do not represent significant source of information for the present research. Then all the financial institutions were drop out as they were not the target group¹⁰. However, in three other firms it was impossible (no published financial reports in the CMVM records for the years 2011 and 2012 were available) to find the data needed to complete the database¹¹. In the end, a total of 39 firms constituted our working sample (n).

Methodologies step-by-step

To respond the *RQ1* a simple identification of the classes and descriptive statistics was used. A database resourcing to MS Excel was constructed whereas the classification of the intangible assets was recorded by firm.

To assist the response of *RQ2*, a preliminary collection of data was enough to illustrate the appropriate conclusions and justify those results.

In order to analyse if the reports of the companies disclose the mandatory information according to the regulation (IAS 38), *RQ3*, a Scope Index (Urquiza, Navarro, Trombetta, 2009) was designed. This methodology revealed to be the most suitable as it combines the evaluation of quantitative and qualitative disclosure information. Furthermore, this index distinguishes narrative information from quantitative information, giving more weight to the latter as it represents a more actual source of

¹⁰ Banco BPI, Banco Comercial Português, Banco Espírito Santo, Banco Popular Español, Banco Santander Totta, Banif SGPS e Espírito Santo Financial.

¹¹ Portucel, Imobiliária Construtora Grão-Pará e Sonae Industria SGPS

measurement (Bhrojraj, 1999) than the former one which may be “artificially” manoeuvred (Balata and Breton, 2005).

The list of disclosures were extracted from IAS 38 and aggregated in 11 groups. The index is computed through the following formula:

$$SCI = \frac{\sum \textit{Valuation of each disclosure}}{\textit{Number of disclosures}}$$

If all the disclosures about intangible assets to have quantitative information reveal, the SCI would be equal to 1. If the company only discloses narrative information the value attributed to that disclosure would be 0.5. The inexistence of information on the disclosure would be valued as 0. The Index will evaluate the mandatory disclosures required by the regulation (IAS 38) and are limited to values between $0 < SCI < 1$.

One limitation to point while building this Index is the fact that some firms might not disclose some information. One of them may be the case that a certain type of intangibles does not exist in the company. However, while collecting the data, it was possible to observe that some firms, even without recognising certain classes or conditions of intangible assets, they produce some narrative information about it. Then, for the purpose of this project, we will share neither Cooke’s idea (1989) nor Silva (2012) of *companies that disclose the most important items also disclose the least important ones*. In my point of view, it is not possible to know if a company is not disclosing because it is irrelevant, or because it is not complying with the regulation.

All this information was gathered in Excel database in which the descriptive statistic results were computed and are available for future research and analysis¹².

¹² A CD with it is provided along with this written report

5. Results

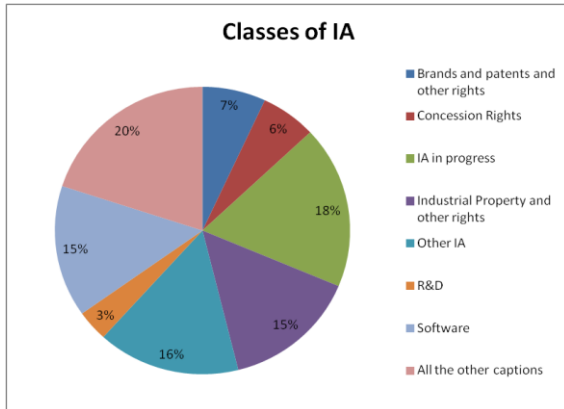
Typology of Intangible assets – Analysis of the classes, how they are recognised and specific discussion of the caption “Other intangibles” issue (*RQ1*)

Types of IA in the samples	
1. Audio-visual Producing Rights	12. IA in progress
2. Brands and patents and other rights	13. Industrial Property and other rights
3. CO2 Licenses	14. Internally generated IA
4. Concession Rights	15. Keymoney
5. Concession Rights in progress	16. Loyalty contracts
6. Development projects	17. Other IA
7. Fixed Assets in progress	18. Players rights
8. Football squad	19. R&D
9. Gaming Concession Rights	20. Radiodifusion licenses and rights
10. IA Business combination definite life	21. Reconversion of Consumption to natural gas
11. IA Business combination indefinite life	22. Software

Table 1 - Types of Intangible assets recognised in the statements of financial position

First it is worth to notice that there are great discrepancies in the classification of intangibles among the firms (56 different types). Nevertheless, some of them represented the same but

with different terminologies. Effectively, a new data structuring was done to harmonise the information¹³, resulting in twenty two reorganised types. Some types occurred more frequently than others. Graph 1 shows how often the previous stated categories were



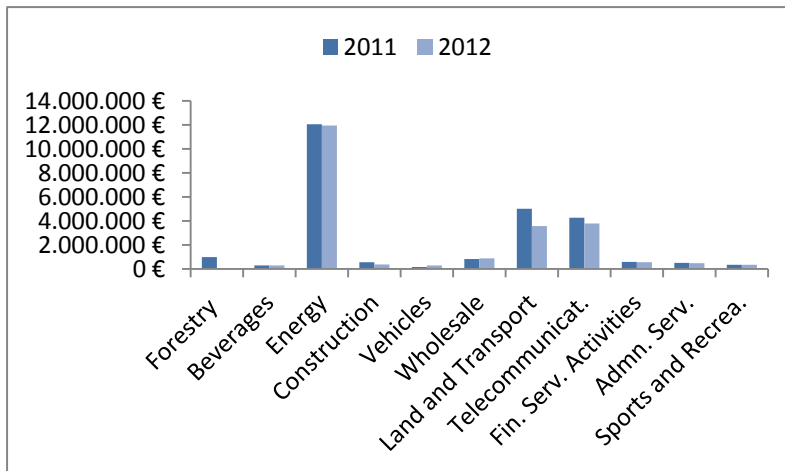
Graph 1 - Classes of Intangible Assets in the 39 firms

represented the classes more recognised by the firms.

recognised and presented in all the 39 firms.

The IA in progress (18%), the Industrial Property and other rights (15%), the other IA (16%) and Software (15%)

¹³ The methodology used took into account the similar types of intangible observed in the different firms and aggregation into captions without losing its meaning, ie (i) Industrial Property caption, (ii) Rights caption and (iii) Industrial Property and other rights caption, the objective was to classify in a single denomination as (iv) Industrial Property and other rights.



Graph 2 - Volume of Net Intangible Assets by Industries Unit: thousand of euros

One important class of intangibles in the energy industry is the licenses concessions (see RQ5). This industry per se holds 53% of the total

assets of all the firms

and the weight of the concessions in the overall assets; it represents 14.5% (2012). Its weight in the energy industry total assets is even more prominent, representing 27.37%. Graph 2 illustrates how significant the intangible assets are in the energy business when compared to the other industries.

As shown in Graph 1, the caption “Other Intangible Assets”¹⁴ has a recurring position in the reports of the firms¹⁵. The vague description of this caption might embody a source of distortion in the quality of the reports.

In fact, 16 companies recognised Intangibles in the caption “Other Intangible Assets” in 2012 and 13 companies in 2011, however, only six detached themselves from the others (table 2).

Companies	2011			2012		
	Net Intangible Assets	Other Intangible Assets	Weight of Other IA	Net Intangible Assets	Other Intangible Assets	Weight of Other IA
Compta	358	18	5,09%	348	18	5,23%
Grupo Media Capital SGPS	18.652	586	3,14%	241.371	14.692	6,09%
Ibersol SGPS	16.206	648	4,00%	16.533	839	5,07%
Reditus SGPS	29.569	22.347	75,58%	27.275	21.090	77,32%
Sociedade Comercial Orey Antunes	455	455	100,00%	300	300	100,00%
Sonae SGPS	579.782	34.896	6,02%	562.455	25.140	4,47%

Table 2 - Weight of Other Intangible Assets in 2011 and 2012: Most relevant values – Units: thousands of euros

¹⁴ Caption *Other Intangible Assets* referred in graph 1 as Other IA

¹⁵ The section *All other captions* (20%) aggregates other classes of intangibles recognised individually, but with frequencies lower than 3%. Not to confuse with the caption “Other IA”.

REDITUS SGPS and SOCIEDADE COMERCIAL OREY ANTUNES classified the majority of their Intangibles as “Other IA” (above 75%), nevertheless, the latter company held a small amount of intangible assets when compared to the other firms. This may be an indicator that Intangibles were not the most relevant non-current asset, and then detailed discrimination might not be necessary. The contrary occurred with REDITUS where 28% of the Non-current assets in both years were intangible assets. Not classifying 75% of those assets by classes clearly constitute a source of misinformation.

Even so, IAS 38 predicts the aggregation of classes of Intangible assets into larger groups if that *results in more relevant information for the users of financial statements* (IAS 38 §119), in these cases, the majority of the assets are part of an undefined group, not adding any relevant information to the stakeholders. Hence, these firms were not in accordance with the definition of class of Intangible provided by the Standard – *grouping of assets of a similar nature and use in an entity’s operation* (IAS 38 §119).

Subsequent Measurement of Intangible Assets (RQ2)

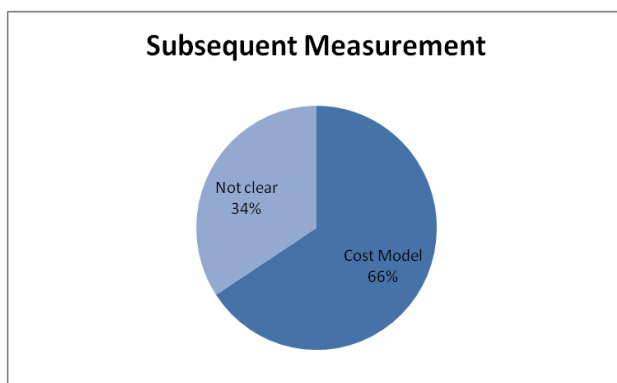
The first issue to point out is the difficulty to obtain information on how the companies measure their intangible assets after initial recognition. In the notes to the financial statements there is no explicitly information about which model the firms adopt, (the cost or the revaluation model). Therefore, only implicitly it was possible to conclude which model the firm applies¹⁶. Two results were found: 66% of the firms measured the intangibles through cost model, while the remaining (34%) revealed unclear information in which the model used (for both 2011 and 2012).

The regulation itself predicts that the use of revaluation model carries difficulties due to the lack of sufficient information to “construct an active market” (IAS 38 §78). In

¹⁶ i.e. through the amortisation methods and inexistence of revaluations in the financial statements notes

addition, assets such as *brands, newspapers mastheads, music and publishing rights, patents or trademarks* (IAS 38 §78) are so inimitable and unique that it is impossible to have an active market as a reference.

The prevailing question is: if there is an active market for the Intangible, would the



Graph 3 - Subsequent Measurement

company use this model to measure this class of assets?

There is no substantial evidence about the answer to this question, but some points may be taken:

To begin with, the process of periodical evaluation of the asset might reveal to be expensive for the firm as it would need to be done according to the possible changes of the fair value of the Intangibles. Depending on their class and on their market, the revaluations may reveal to be somewhat recurrent, creating additional efforts to the firm's accounting departments (use of more resources and increases in the costs). Additionally, the revaluations might need to be done through external sources in order to respect the fairness of the process and avoid deviations from the real revaluation value. A company might need to appeal to external entities to recognise the revaluation processes as valid to pass the auditing tests and the statutory procedures. Furthermore, firms might not want to disclose that information as it may constitute strategy policies and sources of competitive advantage.

Disclosures about Intangible Assets (RQ3)

Dependent Variable: Disclosure Index (SCI)

A Scope Index was constructed in order to measure the extent in which the companies are disclosing Intangibles¹⁷. On this Index the quantity of information is analysed as well as the quality of it. The quality is measured according to the type of information revealed, narrative or quantitative, in which the latter is measured with primacy.

Descriptive Analysis of the Data

	SCI ¹⁸	TA ¹⁹	CIA ²⁰	WTA ²¹	N
Average	0,6110	3,0000	3.646.503,21	14,56%	39
Max	0,8977	5,0000	42.627.844,00	83,04%	39
Median	0,6023	3,0000	657.414,30	7,38%	39
Min	0,1591	1,0000	31.421,96	0,05%	39
Standard-dev	0,1417	1,2566	7750589,0883	0,1999	39

Table 3 - Descriptive Analysis of the different variables of the sample²²

In the period 2011-2012, the average Disclosure Index (SCI) is 0.6110 (Table 3). In the same context analysis, the sample average firms' size was 3,646,503.21 euros (using Total assets as proxy) and each firm, disclosed 3 classes of intangible assets in average terms. Moreover, 14.56% of the reported total assets were intangible assets (average).

¹⁷ This Index considered not only quantitative information as well as narrative information for the reasons explained in the methodology section.

¹⁸ Disclosure Index

¹⁹ Total Assets - Size

²⁰ Classes of Intangible Assets

²¹ Percentage of Intangible Assets over Total Assets

²² Table 3 embodies the general results of descriptive statistics which will be used to draw possible statistic inference linked to Probability Theory.

Business Industry		SCI
≥0,7	Energy	0,759
	Telecommunications	0,756
0,6<SCI<0,7	Activities of administrative services and support provided to enterprises	0,631
	Manufacture of other non-metallic mineral products	0,619
	Sports activities and recreation	0,612
	Wholesale and retail ²³	0,602
	Restaurants and Similar	0,602
<0,5	Activities of head offices and management consultancy	0,455
	Manufacture of wood and cork and articles thereof	0,159

Table 4 - Disclosure Index by Business Sector (Most relevant Results)²⁴

By observing table 4, it is possible to understand, two business industries distinguished themselves from the others, the Energy and the Telecommunications. Their results are placed quite above the average scores, more than one basis point. There are possible reasons for this trend. Firstly, it may be related to the firms' size. The larger the firms the greater the visibility and the greater the scrutiny held by the market and the investors. Therefore, they have incentives to divulge more information (Hassan, Yussof, Yatim, 2012; Souissi and Khelif, 2012; Aljifri, 2008; Aljifri and Hussainey, 2007; Zadeh, Eskandari, 2012; Silva, 2012). The energy industry represents 53% of the total assets of in the sample's firms. In addition, from the five companies belonging to the industry, two of them are the largest companies in Portugal (EDP ENERGIAS DE PORTUGAL, about 13.54% of the PSI All Shares, and GALP ENERGIA, about 16.83% of the PSI All Shares). Other possible reason is related with the specific characteristics of the industry. As a regulated sector, the companies are always under supervision of a regulator which enforces the establishment of some rules (included accounting rules) in order to fulfil the directions stipulated by the state and EU regulations.

²³ When the company had more than one code, the choice of business sector goes for the activity that characterizes further the company. I.e. two types of trade, the wholesale and the retail trade, in this new organization, the companies would be displayed in a unique sector – Wholesale and retail.

²⁴ The classification by business industry was based in the two digits code CAE, which represents the Portuguese classification to economic activities in accordance with its main core business. The first step was to aggregate the results not only by firm but also by business sector. In this aggregation, a reorganisation of the business industries was done according to a specific logical criterion.

Cases such as the Manufacture of wood and cork and articles thereof and Activities of head offices and management consultancy industries, revealed a low disclosure index (lower than 0.5) possibly because of the low importance of the intangible assets (less than 1% of the Total Assets) in the company structure. For that reason, the disclosures of intangibles might be undervalued.

Independent Variables (RQ4)

Size (TA)

The size of a company is majorly related with the public visibility they would receive from the market and the users of financial statements. According to some authors larger firms tend to be more scrutinized under public view as they have a propensity to have more influence in the business (Al-Khazali, Zoubi, 2005; Aljifri, 2008; Aljifri and Hussainey, 2007; Zadeh, Eskandari, 2012). Sometimes, the allocation of more resources to treat the information may lead them to have better conditions to disclose the information (better IT solutions).

In spite of all the reserves related with the right indicator to measure the size of the firms accordingly (Al-Khazali, Zoubi, 2005), this research uses the total assets as a proxy of the firm size like in previous literature about disclosures in financial reporting (Salamon and Dhaliwal, 1980; Silva, 2012).

RQ4.1: Is the size of the firm positively correlated with the Scope Index/Disclosure Index?

Percentage of Intangibles over Total Assets (WTA)

The purpose of this variable is measuring whether the weight of Intangibles over the total Assets has any connection with the value obtained in the Index. In other words, if a higher value of Intangibles means higher Disclosure Index. Previous studies tested the

relation between the WTA and the Disclosure Index and did not find any statistical evidence (Silva, 2012), however, the research was restricted to financial companies. Therefore, possibly with a larger sample and with firms from other industries, the results could be more expressive.

RQ4.2: Are higher values of Intangible assets correlated with the Disclosure Index?

Classes of Intangible Assets (CIA)

This variable considers that the higher the types of Intangible assets a company holds more detailed information it needs to disclose in order to meet the requirements imposed by the regulation. As stated in the research of Silva's (2012) research and in accordance with the regulation (IAS 38 §119), the intangibles should be disaggregated into smaller classes if this brings *more relevant information for the users of financial statements*.

RQ4.3: Are the classes of Intangible assets necessarily correlated with the Disclosure Index?

Results of the Statistical Tests

Table 9 displays the results of the correlations and respective significance values²⁵.

	SCI	TA	CLA	WTA
SCI (Independent Variable)	1			
TA	0.512137* 0.000	1		
CLA	0.39647* 0.012	0.198322 0.226	1	
WTA	0.405014* 0.010	0.035013 0.832	-0.173496973 0.290	1

* 5% of significance

Table 5 - Pearson Correlation Coefficient

²⁵ The correlation test applied was the Pearson Correlation test as it measures the direction and the strength of a linear relationship between two variables. According to the Central Limit Theorem, we may assume that our distribution is well approximated by the Normal Distribution as the sample totalizes more than 25 observations (39 in reality). There could exist a problem if the sample was skewed and not symmetrical, however, according to some authors even with skewed samples, 25 observations may be well approximated by the normal distribution (Newbold, Carlson and Thorne, 2010).

The size of the firms (TA) as shown in table 5 was positively correlated with the disclosure Index (SCI) (in moderate terms – 51.2%). The p-value associated with this correlation is below 0.05 (small), thus there is strong evidence against the hypothesis $\rho=0$ (no correlation between the variables – reject this hypothesis). Then, we are able to state that the relationship between these variables is accepted. The same result was verified in previous literatures (Silva, 2012). The classes of Intangibles (CIA) also presented a weak positive correlation (39.7%) with the disclosure Index, accepted in the same terms as the correlation between the Disclosure Index (SCI) and the size (TA), p-value below 0.05. The same occurred with the percentage of the IA over the total assets (WTA) with a weak correlation of 40.5%.

To conclude, the correlation test among independent variables did not reveal any significant results, which do not allow us to conclude anything about the connection between those variables. However, it indeed revealed weak to moderate positive correlations between the Disclosure Index (SCI) and the size of the firm (TA), the classes of intangible assets (CIA) and the amount of intangibles per total assets (WTA).

The case of REN – Redes Energéticas Nacionais (RQ5)

The specific case of REN is discussed in this project to better illustrate the reason why, in this industry, the intangibles are so representative in terms of total assets (over 90% in the case of REN).

The only classes of intangibles present in the statements of REN are the service concessions and the service concessions in progress²⁶. These classes of intangibles, as mentioned in RQ1, represent about 23.37% of the total assets of the Energy Industry. Table 6 shows that the composition of non-current assets, more precisely the weight of

²⁶ See section 2 “Theoretical and Regulatory Framework”

intangibles assets, drastically changed in the years 2009 to 2010 due to the adoption of IFRIC 12. Before 2009, about 95% of the assets of REN were tangible and after 2009 onwards the tangibles represented less than 1% and the intangibles rose to weights above 90%²⁷.

Under IFRIC 12, REN adopts the intangible asset model as the methodology to recognise the concessions, holding five licenses in 2012 (four for the electricity and gas, and one for the exploitation of the wave's energy). Therefore, 95% of the company's assets are regulated (concessions on the transportation of energy and general management of the system) by a representative of the Portuguese State interests, the regulator for energy services, ERSE²⁸.

	2008	2009	Adoption of IFRIC 12	2009*	2010	2011	2012
BALANCE SHEET							
Net IA	38	-		3.450.992	3.720.857	3.888.161	3.891.464
Property, Plant, Equipment	2.847.243	3.451.875		884	1.201	488	827
Non current Assets	3.412.876	3.646.158		3.646.157	3.965.255	4.158.691	4.287.552
Weight IA	0,001%	0,000%		94,647%	93,837%	93,495%	90,762%
Weight Tangible Assets	83,427%	94,672%		0,024%	0,030%	0,012%	0,019%
INCOME STATEMENT							
Revenue with construction of concession assets	-	-	458.024	458.024	420.483	349.269	200.507
Depreciations Impairments	-129.721	-159.758	-733	-160.491	-172.633	-181.765	-197.368
Cost with construction of concession assets	-	-	-434.154	-434.154	-	-316.305	-172.892
Operating Profit	236.955	249.454	9.246	258.699	250.519	283.189	314.565

Table 6 - REN before and after (*) the adoption of IFRIC 12 - Units: thousands of euros

REN's revenues are majorly related to the remuneration over those assets, whereas the regulator applies a tariff defined for a regulatory period (two years) and with the allowed expenses related with the transportation and management services (the concessions). In the end, of the concession contracts, the company is obliged to transfer the "property" and management of the infrastructures to the State in return for a residual value (net book value of the intangible assets).

²⁷ Annual Consolidated Financial Statements

²⁸ Entidade Reguladora de Serviços Energéticos – Regulator for Energy Services

The concession licenses are **measured** at cost of acquisition plus financial costs associated with the development phase (REN – Annual Report, 2012). The method of amortisation of assets would follow the regulation for Intangibles (IAS 38). REN assumes that the useful life of the asset is related with the regulatory period, and applies a straight-line amortisation from the first day of asset's operation.

Therefore, the value of Intangibles varies either by the increasing the number of projects in concession, or by the reduction through the use of the future economic benefits (REN – Annual Report, 2012).

Indeed, there are specific **disclosures** associated with this class of intangibles (SIC-29), which requires that REN disclose more specific information in terms of the concession arrangements. In the Disclosure Index discussed in RQ3, this component is evaluated in the disclosure *certain special disclosures about IA acquired by government grants*.

Nevertheless, no other result was expected as according to *informal interviews*²⁹, in terms of the concessions, all the mandatory information needs to be disclosed so that the assets could be remunerated. If that does not happen the regulator may penalise the regulated company. Thus, there are no incentives to deviate in terms of disclosing information. Moreover, besides the statutory auditing there are two more auditing processes enclosing the reports from the regulated activities, in this case, Electricity and Natural Gas, enforcing a degree of disclosing beyond the statutory regulations.

6. Conclusions

This work project analysed the 2011 and 2012 financial reports of 39 listed companies in Portugal in order to: (i) verify how they classified the intangible assets in the recognition and initial measurement phase (*RQ1*); (ii) assess the process of subsequent measurement, according to the cost or revaluation models (*RQ2*); (iii) analyse the

²⁹ Acknowledgement to Dra. Paula Almeida by the briefing on the regulated activities.

information disclosed by the firms regarding intangible assets, through the construction of an Intangible Disclosure Index (*RQ3*); (iv) examine whether this index was correlated with the variables size of the firm (TA), relative weight of intangibles in total assets (WTA), and the classes of intangibles (CIA) (*RQ4*); (v) observe, through a content analysis, the reporting of intangibles in the energy sector, compared to REN – Redes Energéticas Nacionais (*RQ5*).

Regarding *RQ1*, discrepancies were found in the classification of intangible assets. Terminologies differed from firm to firm. The most relevant classes were *Intangible Assets in progress* (18%), *Other Intangible Assets* (16%), *Industrial Property and other rights* (15%) and *Software* (15%). Furthermore, the aggregation of classes of intangible assets raised problems under the caption “Other Intangible Assets” as it did not respect the contents predetermined by the regulation (IAS 38, §119).

Regarding measurement (*RQ2*) the main challenge was to find which model of subsequent measurement was adopted by each company. The cost model was the most used model.

On the disclosure analysis (*RQ3*), the average degree of disclosure was 0.61 with the higher results on the telecommunications and energy industries, both above 0.70.

On the subject of correlations (*RQ4*), as the size of the firm (TA), the weight of intangibles (WTA) and the classes of intangibles (CIA) increases, the disclosing activity of the firm also moves in the same trend (all positively correlated with 5% of significance).

Comparing the energy sector to REN (*RQ5*), the results confirmed the growing importance of the intangibles according to IFRIC 12: license concessions represented 14.5% of the assets in this industry. In case of REN 95% of the remunerated assets were

considered intangible assets representing a major source of the operational revenue of REN.

Finally, this research raises a topic of further future research: the use of the intangible asset model described in the IFRIC 12 in other firms in the energy sector and other industries and possible effects on the common size financial statements of the companies.

7. References

Aljifri, K. and Hussainey, K. "The Determinants of Forward-looking Information in Annual Reports of UAE Companies", *Managerial Auditing Journal*, Vol. 22 (2007): 881-894

Aljifri, K. "Annual Reports Disclosure in a Developing Country: the Case of UAE", *Advances in Accounting*, Vol. 24, no. 1 (2008)

Al-Khazali, O. and Zoubi, T. "Empirical Testing of Different Alternative Proxy Measures for Firm Size", *The Journal of Applied Business Research*, vol. 21, no. 3, 2005

Balata, P. and Breton, G. "Narratives vs numbers in annual report: are they giving the same message?", *Review of Accounting and Finance* no. 4(2) (2005): 5-25

Bhrojraj, S. "Management earnings forecasts: A theoretical and empirical analysis". Doctoral dissertation, University of Florida, 1999

Capasso, A. "Stakeholders Theory and Corporate Governance", Università degli Studi del Sannio, 2009

CMVM "Issuers of Listed Securities Admitted to Trading on a Regulated Market and on the Unlisted Market", permanent modifications, last access January 5th, 2014, http://web3.cmvm.pt/english/sdi2004/emitentes/cons_ent_soc_ab.cfm?nome=

Cooke, T. "Disclosure in the Corporate annual Reports of Swedish Companies", *Accounting and Business Research* no. 19 (1989): 113-124

Correia, A. "Activos Intangíveis numa Empresa de Prestação de Serviços – Transição do POC para SNC", Universidade Técnica de Lisboa, Instituto Superior de Economia e Gestão, 2011

Dhaliwal, D. and Salamon, G. "Company Size and Financial Disclosure Requirements: Evidence from the Segmental Reporting Issue." *Journal of Business Finance and Accounting* (1980)

Epstein, B., and Jermakowicz, E. "Intangible Assets" In *Interpretation and Application of International Financial Reporting Standards*, 362, New Jersey: John Wiley & Son, Inc, 2010

Epstein, B., and Jermakowicz, E. "Intangible Assets" In *Interpretation and Application of International Financial Reporting Standards*, APPENDIX C, New Jersey: John Wiley & Son, Inc, 2010

European Equities "Indices of the PSI-20 and PSI-ALL SHARES per company", accessed November 11th, 2013, <https://europeanequities.nyx.com/pt-pt>

Frederick, W. "Recent Developments in Intellectual Capital Reporting and their Policy Implications", *OECD Education Working Papers*, no. 17(2009)

International Accounting Standards Board (IASB), “International Accounting Standard (IAS) 38 Intangible Assets”, *IFRS Foundation*, September 1998, amendments January 2008

International Accounting Standards Board (IASB), “International Financial Reporting Standards Interpretation (IFRIC) Service Concession Arrangements”, *IFRS Foundation*, November 2006

International Accounting Standards Board (IASB), “SIC-29 Service Concession Arrangements: Disclosures”, *IFRS Foundation*, December 2001, amendment November 2006

Lopes, I., and Rodrigues A. “Intangible Assets Identification and Valuation – a Theoretical Framework Approach to the Portuguese Airlines Companies” *The Electronic Journal of Knowledge Management* vol. 5 issue 2 (2007), 193-202, <http://www.ejkm.com/volume5/issue2/p191>

Newbold, P., Carlson, W. and Thorne, B. *Statistics for Business and Economics*, 197, 269-281, 316. New Jersey: Pearson, Seventh Edition, 2010

Penman, S. “Accounting for Intangible Assets: There is also an Income Statement”, Columbia Business School, 2009

Rodrigues, A. *O Goodwill nas contas consolidadas*, Coimbra Editora, 2006

Sá, Carla. “Activos Intangíveis: Impacto da Adopção das IAS ao nível das Despesas de I&D”, Universidade de Aveiro, 2010

Silva, M. “Disclosure of Intangible Assets: An Empirical Study of Financial Corporations in the Iberian Peninsula”, Universidade de Coimbra, 2012

Urquiza, F., Navarro, M. and Trombetta, M. “Disclosure Indices Design: Does it make a difference?” *Revista de Contabilidad-Spanish Accounting Review* vol. 12, no.2 (2009): 253-278

Volkov, D. and Garanina, T. “Value creation in Russian Companies: the Role of Intangible Assets”, *The Electronic Journal of Knowledge Management* Vol. 6, Issue 1 (2008), 63-74, <http://www.ejkm.com/volume6/issue1/p49>