

INSTITUTO POLITÉCNICO DE LISBOA  
INSTITUTO SUPERIOR DE CONTABILIDADE  
E ADMINISTRAÇÃO DE LISBOA



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# IFRS 9 and Financial Derivatives disclosure practices: Euronext Lisbon Vs NYSE

Érica Cavaco Casanova da Ponte

Lisbon, February 2019



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Dissertação submetida ao Instituto Superior de Contabilidade e Administração de Lisboa para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Análise Financeira, realizada sob a orientação científica de Mestre Especialista José Nuno Teixeira de Abreu de Albuquerque Sacadura, professor adjunto de Finanças.

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Lisbon, October 2018

I declare I am the author of this dissertation, which is thereby an original and unpublished work never submitted (wholly or partially) to any other institution of higher education for the purposes of obtaining an academic degree or qualification. I also declare that all the citations are duly identified and referred. I add that I am conscious of plagiarism -i.e. the use of the work of someone else without due reference to the author is a serious ethics violation, which may lead to the present thesis being considered null.

## **Epigraph**

Globalization has much potential. It could be the answer to many of the world's seemingly intractable problems. But this requires strong democratic foundations based on a political will to ensure equity and justice.

Sharan Burrow

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## **Abstract**

This paper investigates and analyse the practices of IFRS 9 by Portuguese companies listed on Euronext Lisbon, concerning on their financial instruments, more specifically the disclosure of financial derivatives as set forth in the International Accounting Standards (IAS), defined in IAS 32, IAS 39 and IFRS 9.

As in 2018 new standard of IASB, the IFRS 9, became effective it is important to look at Hedge Accounting and the disclosure of the elements.

We examine the factors that can influence derivatives disclosure using a sample comprising 93 companies (51 listed on Euronext Lisbon and 42 listed on NYSE), from 2015 to 2017. It was intended to compare a disclosure index between Portuguese companies listed in Euronext Lisbon with non-American companies listed in the NYSE.

Our findings suggest that Portuguese companies exhibit distinct behaviour regarding the application of IFRS 9 when compared to companies listed on bigger markets. The results indicate that contrary to NYSE, companies belonging the Euronext Lisbon have a positive relationship between Total Assets and derivatives disclosure. Furthermore, we found that the level of disclosure of Portuguese companies tends to increase when the audit firm is a “Big Four”.

## **Resumo**

Este trabalho investiga e analisa as práticas à IFRS 9 por parte de empresas portuguesas cotadas na Euronext Lisbon, relativamente aos seus instrumentos financeiros, mais especificamente a divulgação de derivados financeiros conforme o estabelecido nas Normas Internacionais de Contabilidade (IAS), definidas na IAS 32, IAS 39 e IFRS 9.

Como em 2018, a nova norma do IASB, a IFRS 9, entrou em vigor, é importante observar esta Contabilidade chamada de “Hedge” e a divulgação dos seus elementos.

Examinamos os fatores que podem influenciar a divulgação utilizando uma amostra composta por 93 empresas (51 cotadas na Euronext Lisbon e 42 cotadas na NYSE), de 2015 a 2017. Pretendeu-se comparar o índice de divulgação entre empresas portuguesas cotadas na Euronext Lisbon com empresas americanas cotadas na NYSE.

Os nossos resultados sugerem que as empresas portuguesas exibem um comportamento distinto em relação à aplicação da IFRS 9 quando comparadas com empresas cotadas em mercados maiores. Os resultados indicam que, contrariamente à NYSE, as empresas pertencentes à Euronext Lisbon têm uma relação positiva entre a divulgação dos Ativos Totais e os derivados. Para além disso, constatamos que o nível de divulgação das empresas portuguesas tende a aumentar quando a empresa de auditoria se trata de uma “Big 4”.

### **Palavras-Chave/ Key Words**

IAS 39, IFRS 9, Financial Assets, Derivatives, Hedge accounting, Fair Value, Risk.



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## **Abbreviations**

BIC - Bayesian information criterion  
CMVM - Comissão do Mercado de Valores Mobiliários  
CNC - Comissão de Normalização Contabilística  
DAX - Deutscher Aktien IndeX  
DC - Directrize Contabilística  
EC - European Commission  
EFRAG - European Financial Reporting Advisory Group  
EU - European Union  
EURONEXT - European stock exchange  
FAS - Financial Accounting Standards  
FASB - Financial Accounting Standards Board  
FIDP - Financial Instrument Discussion Paper  
FTSE - Financial Times and Stock Exchange  
GAAP - Generally Accepted Accounting Principles  
GDP - Gross Domestic Product  
IAS - International Accounting Standards  
IASB - International Accounting Standards Board  
IASC - International Accounting Standards Committee  
IFRS - International Financial Reporting Standards  
NYSE - New York Stock Exchange  
SEC - Securities and Exchange Commissio  
SEC - Securities and Exchange Commissio

## 1. Introduction

Financial reporting plays an important role in corporate governance systems that seek to align the interests of managers providing information on the financial position of the companies, in order to assist the decision-making by users of such information.

The increasing globalization makes it necessary to reduce differences among international accounting systems, in order to increase the level of comparability between the financial statements of companies from different countries.

Carvalho et al., (2014) postulate that one of the main objectives of accounting harmonization is to achieve comparability between the financial reporting published by the member countries of the various accounting systems.)

The growth in size and importance of Derivatives Financial Markets has shown greater use for financial instruments by companies. Derivatives are now the main instrument to manage risk, hence they have grown taking a larger position on the market. Moreno et al., (2006) highlight the importance of Derivatives on the market, as well as the need to provide relevant and reliable information in annual accounts for the stakeholders.

International Boards for account standardization have come to recognize the need for a common Standard Accounting Model for Financial Assets, establishing in the several standards the Fair Value. Some examples, in a first stage, of fair value standards issued are:

- International Accounting Standard (IAS) 32 by the International Accounting Standards Board (IASB) in 1995, for disclosure and presentation;
- Financial Accounting Standard (FAS) 105 by FASB, earlier in 1990, for the disclosure of information on Financial Instruments, with the risk in the notes outside the Balance Sheet and the Financial Instruments with Concentrations of Credit Risk

Many have blamed Derivatives and International Accounting Standard for the 2008 crisis, arguing that many of the problems of the crisis originated on the added complexity of the increased opacity of financial instruments. Despite several studies that discredit this claims, such as Rong-Ruey Duh (see Duh, Hsu, & Alves, 2012), IASB came with a response in July 2014

with International Financial Reporting Standard (IFRS) 9. IFRS 9 includes a logical classification and measurement model, that allows provisions for impairment losses and a substantial overhaul to Hedge Accounting. (IFRS.ORG, 2018)

This study is motivated by the will countries have shown to reduce differences between international accounting systems and to mitigate companies' risk. Derivatives disclosure information of 93 companies was analysed and the findings suggest that, in contrast with companies from other countries, the case of Portuguese companies revealed a strong relationship between derivatives disclosure and the company's assets and audit type.

### **Investigation Purpose**

This paper intends to analyse the practices on accounting of financial derivatives. It investigates the financial derivatives disclosure practices, specifically on the level of compliance with IFRS 9.

The development of research work reflects interest in obtaining conclusions about the features whereby entities use financial derivatives, by analysing the financial characteristics that gather and motivate their disclosure. A wider and vast presence of these products in the business activity results on more information in annual accounts, therefore it indicates that the variables that affect their acquisition are common to the disclosure of data in financial information. Variables like assets, volume of debts, presence in economies of scale with the use of coverage, larger concentration of capital in the administration, greater short-term-liquidity or the higher dividend payment ratio are the determining factors in the use of derivatives.

(Moreno et al., 2006) demonstrates that larger companies lead to a higher level of indebtedness, and sales international agreements as the exposure to exchange rate risk leads to the use of derivatives.

Analysing these practices with the measurement, recognition and disclosure requirements of IAS 39 and IFRS 9 will help us verify and determinate, whether companies in Portugal comply



with International requirements. Comparing the obtained results with the results obtained from the same analysis focused mainly in companies listed in New York Stock Exchange (NYSE).

This analysis intends to estimate the impact of the international accounting strategy in relation to 2004. Students from the University of Porto presented a study on financial instruments in Portugal one year before IAS 39 became mandatory (see Lopes & Rodrigues, 2006). They found that concerning the derivative instruments, the fair value measurement criterion was being adopted but most only on hedging transactions, the gap between accounting practices and the relevant accounting Standards was quite widespread.

Despite the improvements made so far on the report quality and harmonization with standard accounting procedures, Portugal has shown a need for a better enhancement on the accuracy and consistency of accounting practices in order to move forward regarding the adoption of new International Standards.

Since the rule was created in 2001, it was expected that some financial practices were already being oriented in this direction, but in 55 companies studied only two had adopted the criterion of IAS 39.

While in Germany before the IFRS became mandatory, 59 % of German companies had voluntarily adopted. (Christensen, Lee, & Walker, 2015)

Despite the minor incentives for the companies to adopt or even to disclose financial information the institutional pressure, the possible loss of reputation or the costs incurred can be a strong incentive. (Moreno et al., 2006) documented that Spanish companies, that are more prone to voluntary reporting information on the annual accounts and showing care for reputation costs are mostly characterized by great size and a strong presence on the market with higher indebtedness support on their patrimonial structure. The greater the concentration of the capital supports more data in the annual reports.

This study was focused on Spanish companies in the period between 2000 and 2002 and even though modest or trivial, they were able to see an improvement regarding the implementation of the International regulations on all the listed groups on the study.

Some authors (Mahmoud & Allah, 2009) (Abdel-khalik & Chen, 2015) (Crawford, Wilson, & Bryan, 1997) (Hwang, 2002) have shown evidence of a direct relationship between the

dimension of a country's economy and the policy of a greater use of derivatives, although, from a professional point of view, regarding risk disclosure, many companies are still choosing to declare only what is strictly regulated. The conflicts to implement accounting regulations that increase the transparency of the information highlight little desire on the part of the decision makers, however, it is necessary to increase practices of more transparent and clear data on the financial reports.

### **Reasons for the choice of topic**

This study is driven by the curiosity to analyse the disclosure of Portuguese companies on an instrument so well recognised concerning risk management.

Financial derivatives are a great instrument to study the dynamic of a company or further, of a country. Are they more averse to risk? Faster to adopt new standards, or do they just start thinking about it when they're forced to? What are the characteristics that can influence that disclosure?

In a second phase, the study intends to compare these same companies to companies listed in the United States of America (NYSE). Since IFRS standards were created to bring transparency and increase the comparability and quality of financial information internationally, it is hypothesised that there will not be many differences in accounting for financial instruments between them.

Disclosure is very important on a global market, therefore clear and transparent corporate information is essential for proper function and efficiency of markets.

As Fernandez et al., (2006) noted for Spain, given the lesser orientation from discipline to financial markets, it is difficult for companies to measure the positive effects that greater data can report on themselves. (Moreno et al., 2006) this could be applied to Portugal as well.

## **Structure of the dissertation**

The present master dissertation is divided into 5 chapters.

The first chapter, the Introduction, provides the introductory background, outlining the objectives of the research, its underlying reasons and an insight into the structure of the thesis, devoting a section to each of these matters.

The second chapter, Theoretical Background and Literature Review, presents the theoretical framework related to the study. To better understand accounting disclosure and therefore the importance of international standards, it starts with an overview of the background, how, when and why. Then it provides the review of the Portuguese theoretical and empirical academic research available, to study the country state on the derivatives particular statement. Finally, the last part provides the review of all the specifics of the influencers in the study.

The third chapter, Hypotheses, and Methodology explains the empirical part of the present research. The first section of this chapter puts forward disclosure of the hypothesis, and the second covers the methodology used to validate (or not) the previously named hypotheses, describing the data, the variables and the statistical methods used.

The fourth chapter, Findings, and Discussion deals with findings and their discussion, outlining the results of the statistical tests performed in relation to the hypotheses.

The fifth and last chapter contains conclusions as regards the research performed, addresses its limitations and provides suggestions as to further possible research lines.

## **2. Theoretical Background and Literature Review**

This chapter will emerge in several examples and in the most important aspects which led to the appearance of IFRS 9.

In this context, first, it will explore the IASB and its role in the harmonization process, listing advantages, objectives and obstacles.

After highlighting and comparing the relevant transparency and financial statement comparability it was important to look into the country in the study to check previous studies on the adoption of new rules.

Finally, the subject-matter of the third section of this chapter will be the focus of the statements under study, on their contents. It introduces the financial derivatives and it will enlighten some important aspects of measurement on these statements, the fair value.

## **Overview**

IFRS formation started in 1973 as The International Accounting Standards Committee (IASC) where professional accounting bodies of Australia, Canada, France, Germany, Japan, Mexico, Netherlands, the United Kingdom/Ireland, and the United States agreed to adopt International Accounting Standards for cross-border listing. (IFRS, 2018)

In 1989, IASC approved Framework for the Preparation and Presentation of Financial Statements (the Framework) in order to start conducting a structure to help define concepts for presenting information for the stakeholders. Previous research on compliance with IAS shows that IASC had little influence over each country's accounting practices, as reported by Evans and Taylor (1982), Nobes (1990) and (Lopes & Rodrigues, 2006).

On 2001 IASC converted to IASB in order to develop a single set of high quality, understandable, enforceable and globally accepted financial reporting standards based upon clearly articulated principles (IASB, 2012) cit in Armstrong et al. (2010b), the International Financial Reporting Standards (IFRS). A year later, European Union (EU) member states, committed themselves to require IFRS for all companies listed in their jurisdictions from 2005 (Union, 2002)

The IASB is built without an elected official or other governmental authority, a transparent standard-setting process with participation of constituents is a key element for its legitimacy states that in the fulfillment of its duties. Normalizers must try to be as open and transparent as possible, without the governmental authority to monitor, the participation of the public in the process is mandatory. (Rodrigues et al., 2017)

The EU role was imperative on accounting harmonization, by imposing from 2005, the European Commission (EC) regulation 1606/2002. The European Parliament and the Council adopted this proposal of regulation (Regulation 1606/2002) concerning the convergence of the financial reporting standards.

On its second point it's settled that "In order to contribute to a better functioning of the internal market, publicly traded companies must be required to apply a single set of high-quality international accounting standards for the preparation of their consolidated financial reporting standards. Furthermore, it is important that the financial reporting standards applied by Community companies participating in financial markets are accepted internationally and truly global standards.

This implies an increasing convergence of accounting standards currently used internationally with the ultimate objective of achieving a single set of global accounting standards." Furthermore, it is emphasized: "It is important for the competitiveness of Community capital markets to achieve convergence of the standards used in Europe for preparing financial statements, with international accounting standards that can be used globally, for cross-border transactions or listing anywhere in the world." (Union, 2002)

Among other aspects, the principle of the purchase price or production cost was replaced for the fair value (for certain types of assets and liabilities).

## **Harmonization**

Nowadays regarding the globalization, the need for comparing statements has become increasingly urgent, which requires the harmonization of the regulations at different levels.

The primary reasons for harmonization are to increase the level of transparency, comparability, clarity, and reliability of financial and accounting reporting principles, and to reduce the costs, especially in the case of multinationals. Financial Markets and the internationalization of companies created the need for new investors.

Harmonization intends to eliminate differences in accounting systems so that the financial statements of companies from different countries become comparable, with the IASB being regarded as primarily responsible for the diffusion of international accounting harmonization when issuing standards.

(Carvalho et al., 2014) point out that the application of international accounting standards results from a diverse set of forces, such as the pressure exerted by the professional segments, national and international political decisions and the involvement of the various sectors that operate in the market. (Carvalho et al., 2014).

EU started to worry about harmonization since the 70's, the Fourth Directive was accepted in 1978 with the aim of improving the comparability, and later in 1983, it was the first directive where the "real image" conception appeared, the objective was the harmonization of making accounts in case of companies, as well as the fact that the company should reflect the financial and profit condition by the given calculation methods and exemption criteria as if it was a single enterprise as demonstrates in (Darabos & Herczeg, 2015).

In countries outside the scope of harmonization accounting systems companies have to operate transnationally to prepare as many financial statements as the countries they operate with, making very difficult to compare financial statements of units operating in different countries and draw conclusions of its economic performance within companies. As a consequence of the difficulties inherent in the analysis and interpretation of prepared on the basis of different accounting systems, high costs in order to understand the company's real financial situation (Carvalho et al., 2014).

The major obstacle to accounting harmonization lies in the differences between the accounting practices between countries, which make the implementation of IFRS an extremely complex process. These accounting practices reflect the social, economic, cultural, legal and political context in which they are inserted, being, therefore, the result of the interaction of several factors environmental impacts. Thus, each country has an accounting system adequate to its reality.

## **Standardization**

IFRS adoption can improve corporation's disclosure, earnings and reporting quality, by increasing the transparency, and the financial statement comparability. These improvements can potentially help investors to evaluate a potential investment in the foreign capital market in a more easy and straightforward way, and therefore with a lower risk. Despite eliminating national accounting differences among countries, earnings quality remains different across countries. (Houque et al., 2012) document that this fact is due to the intrinsic culture, and prevalent legal system, in each country that can lead to different interpretations of accounting standards. Douppnik and Perera (2009) reinforce the idea that different levels of compliance across countries, can potentially lead to the differences in financial statements as in Houque et al., (2016), yet the impact of mandatory adoption on earnings quality is stronger the higher the level of secrecy in a country, so despite of the differences found by Douppnik and Perera (Douppnik & Perera, 2009) and Houque et al.,(2016) if the adoption has greater impact in the countries with high secrecy it means at the end, despite different they are closer.

Differences in the institutional environment are likely to lead to differences in the quality of financial reporting even where the same accounting standards are applied. Culture, taxation and judicial system and legal system impacts on financial reporting choices and quality, the higher the level of uncertainty avoidance and the lower level of the individualism, the higher is the level of tax evasion across countries. The investor protection can also influence earnings quality, low earnings quality is less likely to occur in countries with stronger investor protection. The higher the level of secrecy in a country the lower the level of earnings quality of firms. IFRS adoption improves earning quality but also impacts on the firm level for audit quality, sales, capital structure, growth, cash flow from operations, and losses, and at the country level for investor protection.

There is also a higher probability that larger losses are reported in the post-adoption period than in the pre-adoption period; Houque et al., (2016), found that adoption of IFRS has a positive

effect on earnings quality and that the impact is stronger the higher the level of secrecy in a country.

A clear and transparent corporate information is an essential factor for the proper functioning and efficiency of markets due to the direct influence on the placement of assets by investors. Corporate information reached a level of importance that regulators need to maintain active issuance of the new accounting standards, especially at a time when the transparency and Corporate Governance are proclaimed as a fundamental principle.

The IASB implementation of IAS in the European environment is the maximum exponent of the wishes expressed by European Union Financial Services, but unfortunately, the slow development of new standards occasionally turns informational transparency subject to a willingness on the matter of companies to increase the data revealed within their annual accounts (Moreno et al., 2006).

All stakeholders, such as preparers, auditors and users have different and often contradictory interests, making it almost impossible to develop an accounting standard that is satisfactory for all parties. There is a concern that some political pressures, can or could create international accounting standards that do not always work to the best interest of investors and other stakeholders. As Barniv and Myring (2015), have pointed on the study “How would the differences between IFRS and U.S. GAAP affect U.S. analyst performance?” companies include on higher costs in the year of IFRS adoption, so it is very difficult to examine and measure costs and benefits of IFRS adoption immediately.

“To date, the attempts at harmonization with the widest scope have been made from two perspectives: that of the EU, orientated towards reducing the differences between the countries of this grouping, and that of the IASB, focused more on international standardization. Combining the two perspectives, the EU, through Ruling (CE) 1606/2002, of 19 July 2002, requires all the stock market-quoted companies within its jurisdiction to prepare their consolidated accounts in accordance with the IFRS drafted by the IASB, from the year 2005. Thus, the EC has abandoned the idea of issuing accounting standards and has decided instead to support those issued by the IASB. Nevertheless, it reserves control over the application of the IFRS in the EU context by means of the mechanism of endorsement or acceptance, relying for



this on the advice provided by the European Financial Reporting Advisory Group (EFRAG) (Gonzalo, 2003; Giner, 2003).” (Bonsón, Cortijo, & Escobar, 2009)

In order to achieve accounting harmonization on the world scale, IASB has been working with XBRL taxonomies. XBRL is a language based on XML (metalanguage, represents metadata that is essentially data about other data) for the electronic communication of business information.

It is designed to improve the exchange, agregation, and analysis of corporate data requiring disclosure, through a unique tagging structure that provides interoperability. It is therefore essential to develop global accounting standards as a unique foundation on which the XBRL taxonomies can be established so that it becomes possible to compare the financial information originating from various countries. (Bonsón et al., 2009) “27,000 of the 49,000 companies listed on the 88 largest securities exchanges in the world use IFRS Standards. 90% of the companies that don’t use IFRS Standards are in China, India, Japan, and the United States.”(Pacter, 2017)

China took IFRS as a starting point but then make various changes. For 2007 onwards, the consolidated statements of Chinese listed companies had to use a set of standards based on IFRS. Nonetheless, there are several clear differences, it is an adaptation of IFRS more than an adoption. For example, unlike the rule under IAS 36, impairments must never be reversed. (Roberts et al., 2006)

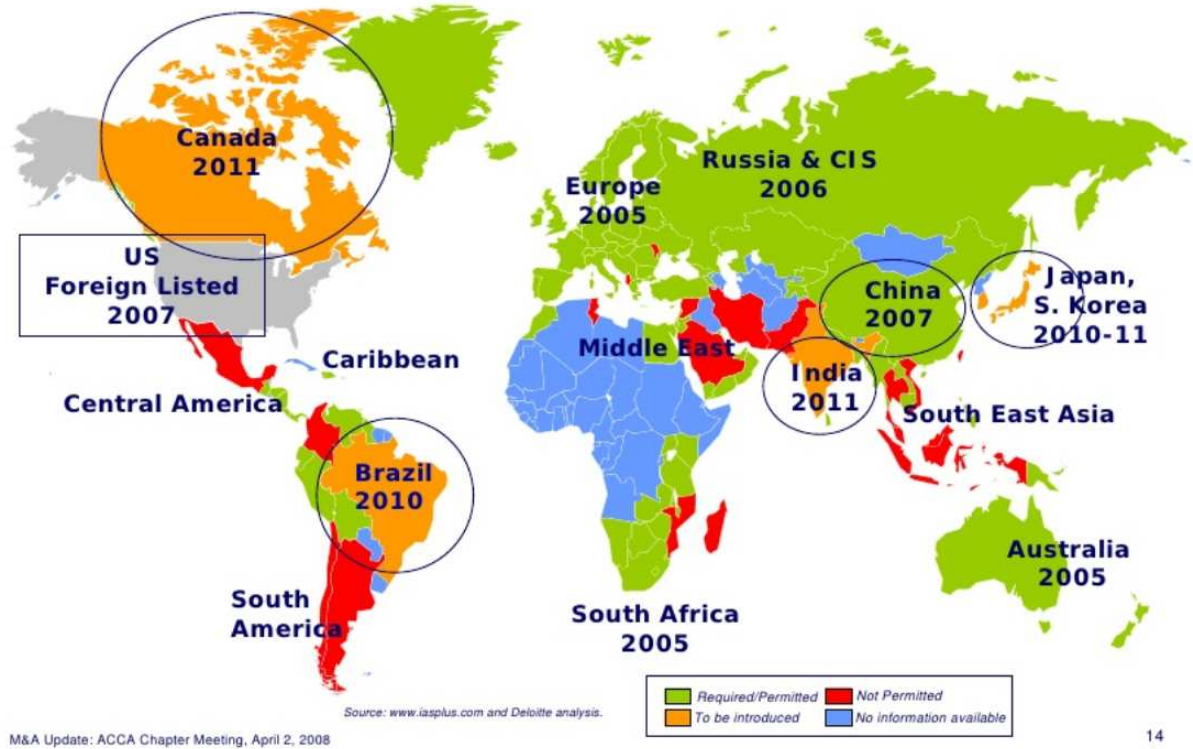
For a better view of the applicability of standards in each country every year, there is a Pocket Guide to IFRS Standards. On 2017, «of the 150 jurisdictions, 126 required IFRS Standards for all or most domestic publicly accountable entities (listed companies and financial institutions) in their capital markets. Of the remaining 24 jurisdictions that have not adopted IFRS Standards; twelve jurisdictions permit, instead of requiring, IFRS Standards— Bermuda, the Cayman Islands, Guatemala, Honduras, Japan, Madagascar, Nicaragua, Panama, Paraguay, Suriname, Switzerland, and Timor-Leste; one jurisdiction requires IFRS Standards only for financial institutions: Uzbekistan; one jurisdiction is in the process of adopting IFRS Standards in full but, for now, still has some differences—Thailand; one jurisdiction is in process of converging its national standards substantially (but not entirely) with IFRS Standards—Indonesia; and nine jurisdictions use national or regional standards—Bolivia, China, Egypt, Guinea-Bissau, India, Macao, Niger, the United States, and Vietnam.

The 126 jurisdictions classified as requiring IFRS Standards for all or most domestic publicly accountable entities include the EU member states to which the IAS 39 Financial Instruments—Recognition and Measurement ‘carve-out’ applies. The carve-out affects fewer than two dozen banks out of the 8,000 IFRS companies whose securities trade on a regulated market in Europe. The 126 also include several jurisdictions that have adopted IFRS Standards nearly word-for-word as their national accounting standards (including Australia, Hong Kong, South Korea and New Zealand), and three jurisdictions that have adopted recent, but not the latest, Bound Volumes of IFRS Standards—Macedonia (2009), Myanmar (2010), and Venezuela (2008). Those jurisdictions are working to update their adoption to the current version of IFRS Standards.» (Pacter, 2017)

For a better understanding of the global adoption please see Figure 2.1.

Corporate information is an essential factor for the proper functioning and efficiency of markets, the direct influence on the placement of assets by investors. Assuming such importance, regulators have maintained an active in the issuance of new accounting standards.

# The World of IFRS



**FIGURE 2.1 The World of IFRS**  
(Chatziplis, 2010)

The FASB has also intervened in the accounting harmonization process with the IASB in an attempt to bring the two organizations together.

The FASB and the IASB have been working together since 2002 with the objective of converging the standards, making existing ones compatible and coordinating work programs to ensure that compatibility is maintained in the new standards as highlighted in (Carvalho, Albuquerque, Quirós, & Justino, 2014)'s seminal study.

FASB or Financial Accounting Standards Board is the independent, private-sector, not-for-profit organization with 16 trustees found in 1973. These trustees appoint five board members who are the FASB decision-making group that are responsible for the establishment of financial

accounting and reporting standards for public and private companies and not-for-profit organizations that follow Generally Accepted Accounting Principles (US GAAP). The FASB develops and issues financial accounting standards through a transparent and inclusive process intended to promote financial reporting that provides useful information to investors and others who use financial reports. (FASB.ORG, 2018)

**TABLE 1** US GAAP - IFRS CONVERGENCE HISTORY

| US GAAP - IFRS Convergence History |   |  |
|------------------------------------|---|--|
| 2002                               | "Norwalk Agreement"                                     | FASB and IASB commit to compatible accounting standards; joint effort      |
| 2006                               | "Memorandum of Understanding"                           | FASB and IASB develop roadmap for convergence; specific milestones by 2008 |
| 2007                               | SEC accepts IFRS statements from foreign issuers        | Result of European Union requiring its listed companies to use IFRS.       |
| 2008 - 2009                        | Ongoing GAAP - IFRS convergence projects; update to MoU | FASB and IASB reaffirm commitment to converge all major standards by 2011. |
| 2010                               | SEC proposes roadmap for IFRS adoption                  | 2011 decision on if/when IFRS will be mandatory for US issuers             |

**Source** Adapted from Ford (Ford, 2011)

US GAAP is an extremely regulated and strict system, generally used in the United States although it still has a great significance in the world, showing a decreasing tendency in the past years.

The systems of IFRS and the US GAAP fought spectacularly regarding the fact that the American Securities and Exchange Commission (SEC) did not accept IFRS as the replacing

system of the US GAAP. They would have liked to think of it as a possible alternative. Their argument was legitimate from the aspect that the total capitalization of the two biggest European stock exchanges such as the Financial Times and Stock Exchange (FTSE) in London and the Deutscher Aktien Index (DAX) in Frankfurt do not exceed even the half of the capitalization of the New York Stock Exchange. The European counter-argument was naturally the fact that the reliability of the European accounting system is higher than that of the USA, on which basis an Enron- case would have never happened (Rozsa, 2014) cit in.”(Darabos & Herczeg, 2015).

In 1998, FASB issued Statement of FAS 133, Accounting for Derivative Instruments and Hedging Activities.

By FAS 133 all derivatives as either assets or liabilities need to be accounted at fair value, although for changes in the fair value of a derivative will depend on the reason for holding the derivative and whether is designated as and qualifies for hedge accounting. If it qualifies as hedge accounting, it receives a special accounting treatment that essentially defers gains or losses until the underlying transaction is complete. Hedge ineffectiveness, the extent to which the loss or gain on the hedged item is not exactly offset by gain or loss on the derivative instrument in a qualified hedging relationship, the result is recognized immediately. Non-hedge derivatives are marked-to-market on the balance sheet, their gains or losses have a direct effect on the income. (Hwang, 2002)

FAS 133 Implementation has discouraged firms from engaging in speculative activities. (Zhang, 2009)

After adopting the FAS 133 firms engaged in a more prudent risk-management behavior with more stable volatility. (Zhang, 2009)

Barniv and Myring studied the differences between IFRS and U.S. GAAP and the affectivity on the U.S. analyst performance and proved that despite the differences between them, these differences have no significant effects on forecast dispersion. (Barniv & Myring, 2015)

Notwithstanding the differences between U.S. GAAP and IFRS are increasing across companies, U.S. analysts are more capable to distinguish their performance from their peers. This evidence suggests that the advantage gained by the superior analysts is short-lived, as less qualified U.S. analysts relatively quickly learn IFRS. (Barniv & Myring, 2015)

## **Portugal**

In 1991 Portugal started to converge with international accounting standards once the Portuguese Accounting Standards Board, Comissão de Normalização Contabilística (CNC) began issuing accounting standards, Directrizes Contabilísticas (DCs) according to international accounting standards. At that time Portugal could not receive any support from the EU to regulate new accounting issues, so international accounting standards were adopted by Portugal using DCs.

The Portuguese system was slowly losing its French influence and becoming more similar to IFRS. According to (Fontes, Rodrigues, & Craig, 2005) in 2003 Portuguese standards were already found to exhibit a 50% similarity with IFRS.

IFRS was first proposed in Portugal by the Portuguese Accounting Standards Board (CNC) as for a dual accounting model in 2003. This proposal was for the listed companies although with optional for other entities to use either Portuguese Accounting Standards (issued by the CNC) or IFRS.

Listed companies are required to adopt International Accounting Standards (IFRS/IAS) since 2005. And on Regulation no. 11/2005 of Comissão do Mercado de Valores Mobiliários (CMVM) provides that issuers of securities not covered by Regulation (EC) n° 1606/2002 on the presentation of consolidated accounts should present their accounts according to the IASB standards after 1st January 2007. In addition to this requirement for all issuers of securities, with the Decreto-Lei no. 158/2009 Portugal issued the Sistema de Normalização Contabilística (SNC), replacing the Plano Oficial de Contas (POC), reinforcing the harmonization between Portuguese accounting and the IASB standards, since the standards are based on IAS / IFRS. (Carvalho et al., 2014)

Recent study by Lopes and Rodrigues (2006) investigates how far were Portuguese companies from IAS, although they had used data from 2001. At that time, they were able to conclude that

the two standards were not as alike as they had previous thought, one of the most obvious facts were the lack of derivative accounting standards for non-financial companies.

Nevertheless, accounting rules for financial companies were closer to IAS for the fair value was already accepted for trading financial instruments. Specifically on derivatives, fair value was adopted on the most, however, on hedging transactions, the gap between accounting practice and accounting Standards were quite relevant and the level of disclosure very low. (Lopes & Rodrigues, 2006)

Accounting rules for non-financial companies in Portugal included fair value measurement in futures contracts accounting (trading operations). As far as other off-balance-sheet financial instruments were concerned, there were no specific accounting rules. The on-balance-sheet financial instruments were measured at cost (or market value, if it is lower). (Lopes & Rodrigues, 2006)

Pereira, Agostinho and Alves, Maria studied the effects of this transaction on non-financial companies more specifically about Earning Management proving that in Portugal even after IFRS/IAS adoption companies showed evidence of earnings management (Earning management being the management intervention in the production process and reporting of accounting information in order to obtain certain self-benefits.) (Pereira & Gaspar, 2017)

As Ahmed Allah pointed in his study, “managers are traditionally viewed as players of the accounting number game. They are often the directors and the actors of the accounting shows. Mapping the game is one of their creative practices in the darkness of annual reports, where disclosure in all its levels, can never reflect what is behind the stage.” (Mahmoud & Allah, 2009)

## **Financial Instruments**

Before looking on the specificity and particularities of the Financial Instruments Standards it is indispensable to understand it's components.

A financial instrument is a contract of an entity that gives rise to a financial asset, a financial liability or an equity instrument to another entity. It is recognized in the balance sheet in full results and classified in several categories, depending on the type of instrument.

Explicit in IAS 32 are three types of financial instruments: financial assets, financial liabilities, and equity instruments. A financial asset is “cash, another entity equity instrument or a contractual agreement bearing right to receive cash or financial assets or exchanging in potentially positive conditions financial assets or liabilities. A financial liability on the other side bears the obligation to deliver cash or financial asset, exchange financial assets or liabilities in potentially negative conditions or to be settled in the firm’s equity instruments.

A contract with a residual interest in assets after deducting liabilities is an equity instrument.” (IAS 32.11) cit in (Mahmoud & Allah, 2009)

A Financial Asset can be an investment in other companies, equity shares, an investment in debt securities or an investment in derivative products. (Dias & Rito, 2009)

## **Derivatives**

Derivatives are financial instruments settled in the future - .e. part of the futures market whose value or transaction price depends on the value of another asset, including options, rights, warrants, futures contracts, forward contracts, and swaps.

A derivative is basically a bilateral contract that derives its value based on the changes in the underlying of the contract, the underlying can be a specified interest rate, commodity price, index of prices or rates, or another economic variable from which the value of the derivative is derived, it can be a price or rate of an asset or liability but it is not the asset or liability itself. (Hwang, 2002)

Futures are standardized contracts which allow the purchaser to buy or sell a specific quantity of a commodity, financial instrument or index at a specified price on a future specified date. Futures are traded on an exchange which increases the liquidity and reduces the risk of holding



futures. However, since they are standardized as to quantity and time period, they are less flexible for design purposes. (Crawford, Wilson, & Bryan, 1997)

Forward contracts are similar to futures contracts in that both are contracts to buy or sell an underlying instrument, currency, or commodity at a future time period at a specified amount. However, since forwards are not traded on an exchange, they are less liquid but offer more flexibility in design as to amount and time period. (Crawford et al., 1997)

A swap, in general, is an exchange of payment streams between two parties for a specified period of time. An interest rate swap exchanges payment streams based on different interest rates on a specific amount (the notional). A currency swap exchanges payment streams based on different currency values for a specified time period. The major risk with swaps is the risk that the other party to the swap (referred to as counterparty) will default on the payments. However, collateral can help to neutralize some of this risk. (Crawford et al., 1997)

An option contract gives the holder the right, but not the obligation, to sell or purchase an item at a stated price during a specified time period. In exchange for this right, the buyer pays the seller a non-refundable fee called a premium. Options provide unique hedging opportunities by protecting against adverse market changes while allowing the buyer to take advantage of favorable market moves. (Crawford et al., 1997)

With the exception of forward contract, derivatives have conditional rights within the control of the entity (put) or within the control of the holder of the claim (call). It can be settled in various ways as by exchanging the underlying financial instruments, by net in cash or net in equity instruments.

They can be found on the annual reports measured in three ways: as a total notional amount outstanding at a point in time, as the total fair market value at which these contracts could be traded or settled at a point in time or as the turnover amount during a period of time. (Abdelkhalik & Chen, 2015)

Different designations (or decision to designate) for a derivative, results on a different financial result, as proved by Hwang, where she used the same instrument to hedge risk in three different cases and proved also that volatility is smaller if the derivative is not designated as a hedge. (Hwang, 2002) Derivatives should be used as instruments to hedge risks and it is dangerous not to do so.

A greater aversion to risk also increases the investments in derivatives to decrease the chances of bankruptcy or to justify corporate coverage by reducing the possibilities of Property problems arise.

The use of derivatives is used mainly to reduce risk exposure by transferring risk from one party to another. The use of derivatives designated as cash flow hedge is negatively associated with earnings volatility, a finding that is consistent with hedge accounting treatments that remove from reported earnings the volatility that results from changes in fair values of effective hedging instruments, there is a negative relationship between market return volatility and the extent of using cash flow hedge accounting, suggesting that the market views the use of cash flow hedge as a risk-reducing device. Bank holding companies use more derivatives for non-trading purposes when faced with high levels of earnings volatility and equity risk. Hedge accounting provides incentives for firms to use more derivatives to reduce their risk exposure. (Abdelkhalik & Chen, 2015)

The increase on the total of debt could be a reason for the companies use of financial derivatives, so the greater risk represented by the volume of debt will have a positive impact on the use of financial derivatives and consequently on greater information transparency.

The growth of global markets can as well be a reason for the use of derivatives, they help firms hedge the foreign currency exposure risk associated with the importations and exportations and foreign investments. (Crawford et al., 1997)

Speculation on prices can emerge and suddenly collapse a market or even an economy consequently it is crucial to establish accounting statements for financial assets (e.g. the case of The Dutch tulip mania of the 1630s).

Starting with IASC in 1988, endeavour to develop an acceptable financial instruments accounting standard, at that time one of the most central steps was the accounting for Financial Assets and Financial Liabilities, issuance of a Financial Instrument Discussion Paper (FIDP), to further propose and discuss the issue of fair value in respect of recognition and measurement which represented a start toward approval of IAS 39 and proposed fair value accounting for all financial instruments. (Chatham, Larson, & Vietze, 2010).

Information provided on the financial instruments in the annual accounts lacks accuracy and it can be considered or seen as deficient. The progressive concern about its proper control has

pushed researchers and regulators to the carrying out of numerous researches works that deepen in the usefulness of the data provided. Managers tend to only disclosure what is legally imposed.

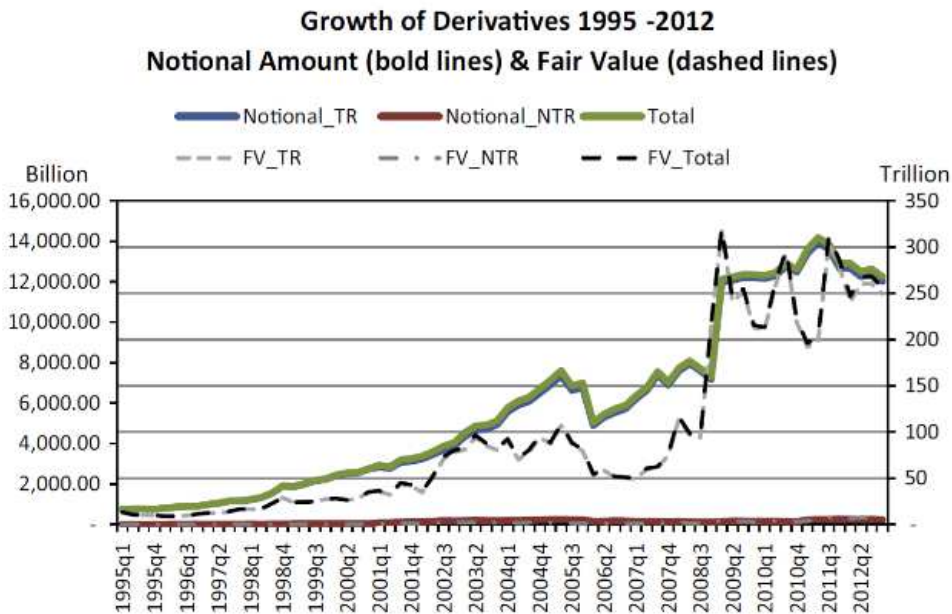
In 1997 Crawford, Lil E., Wilson, Arlette C. and Bryan, Barry J. consider the accounting for derivative financial instruments as inconsistent, and without comprehensive authoritative guidance, this was after FAS 105, released on 1990 and FAS 119 in 1994. The authors refer the standards existing at the time as “piecemeal”. Accounting information should be comparable, the lack of it results in a deficiency guidance. The purpose of having standards is to create decision-useful information. (Crawford et al., 1997)

Financial Instruments legislation was qualified as “imprecise” due to the lack of a clear and concise definition of its legal meaning. It is important to create a faithful image to improve the quality of the annual accounts, qualifying as mandatory any information that is likely to be useful for decision making.

It is known that derivatives can be a great instrument to manage risk notwithstanding a firm can increase risk by intentionally speculating in the derivatives market (speculator) or by failing to hold effective hedge instruments (ineffective hedge) nevertheless, managers still prefer less volatile earnings, the earning. As documented in (Zhang, 2009)’ study, the earning can be lower but it helps to reduce the perceived risk.

Therefore, derivatives can be classified into trading derivatives and hedging derivatives. Accounting for trading derivatives is the same as accounting for trading marketable securities—marked to market and changes in fair values are posted to earnings. Accounting for hedging derivatives would depend on hedging effectiveness. (Abdel-khalik & Chen, 2015)

Between the year 1995 and 2012, the total amount of financial derivatives grew exponentially by 1700%, a stunning growthrate that significantly outpaces the growth of gross domestic product (GDP) both globally (240%) and in the USA (212%).



**FIGURE 2.2 GROWTH OF DERIVATIVES 1995- 2012**  
 (Abdel-khalik & Chen, 2015)

Derivatives recognition requires incorporation in the balance sheet or income statement this recognition requirement set by the framework concerns the probability of the flow of future economic benefits attributable to the item and the existence of a reliably measured attribute (cost or value) (Framework.82, 83) cit in (Mahmoud & Allah, 2009).

### IAS 39

In order to establish recognition criteria and appropriate measurement bases for financial assets, financial liabilities and some contracts for the purchase or sale of non-financial items the IASB has issued the IAS 39.

On former IAS 39, Derivatives were not recognized on the sheet because they were generally used only to secure a position, however, as was shown in (Hodder, Hopkins, & Wahlen, 2006)

when companies began to account for their Derivatives they realize that after all in many cases they were not classified as Hedge Accounting.

The Standard provided guidance on the recognition and measurement of diverse financial instruments, classifying different financial instruments has been tied to the management intention. According to (Mahmoud & Allah, 2009) that was perhaps the reason for IASB to feel the need to issue an amendment law for IAS 39 on embedded derivatives reclassification for financial assets that were only available in 2009.

According to IAS 39 Financial Instruments should be measured at fair value, however, in some jurisdictions, amortized cost accounting is also permitted. "Special rules apply to embedded derivatives and hedging instruments." (Deloitte, 2016)

There is a difference between the fair value at the initial measurement and the one required for certain financial assets and liabilities at the subsequent measurement. The fair value when the item is initially recognized is the fair value for the consideration, while it is the fair value for the financial instrument itself when the item is subsequently measured (Bradbury, 2003) cit in (Mahmoud & Allah, 2009)

While IAS 32 prescribe principles for classification and presents financial instruments as liabilities or equities, offsetting financial assets or liabilities, the purpose of IAS 39 is to establish principles for recognition, derecognition, and measurement for those financial assets and liabilities.

Lim and Lobo examined the implications of 2008 amend in IAS, despite the decline in analyst forecasting ability they concluded that this negative effect on analyst behavior was only transitory, it represents the time shock to analysts forecasting ability without a long-lasting effect. (Lim & Lobo, 2013)

Classifying different financial instruments has been tied to the management intention. (Mahmoud & Allah, 2009)

As referred, IAS 39 was heavily criticized at the time of the crisis, 20F disclosure from Allied Irish Bank (2005 cit in (Duh et al., 2012) claimed that IAS 39 recognizes impairment losses, leads to an impairment charge with greater volatility. On the other hand, Badertscher, B, Burks, J & Easton, P (2012) proved that the fair value had no effect in this aspect, the issue was that

most of the assets, namely the banking ones (Object that was studied by the referee authors) were not fairly valued they were undervalued. (Badertscher, Burks, & Easton, 2012)

It allowed the recognition of impairment provisions in post-crisis studies, it was noted that losses on financial instruments had a late recognition, therefore, companies that have adopted the IFRS will have to recognize the expected losses of the total useful life from 2018 of the asset as it is recognized for the first time.

## **IFRS 9**

IFRS 9 classifies and determines the accounting measure of financial assets and financial liabilities in the financial statements, in a measurement on an ongoing basis. It introduces a logical approach to the classification of financial assets, driven by the cash flow characteristics and the business model in which an asset is embedded. As mentioned previously, IAS 39 was considered very difficult to measure accurately, contrary from IFRS 9, where we have only one simple and singular rule.

It also presents a single model of impairment that is applied to all financial instruments, eliminating all the complexity of previous accounting models.

IFRS 9 introduces a substantially reformed model for Hedge Accounting with new disclosures of improvement over Risk Management. The new model makes a substantial revision of Hedge Accounting that aligning accounting treatment with Risk Management, allowing entities to better transparency in financial statements.

The purpose of Hedge Accounting is to represent in the Declarations the effect of the activities of Risk Management. Which use financial instruments to manage exposures arising from risks that may affect profit or loss or other comprehensive income.

The exposure to different financial risks is the motivation for companies to carry out hedging activities. The accounting for hedge concerns the hedged item, hedging instruments, and hedge effectiveness. Hedge accounting is justified because of the accounting mismatches in

measurement and recognition. The accounting mismatch in measurement results because some financial instruments are not measured at fair value through profit or loss while all derivatives used in hedging instruments are measured at fair value. In terms of recognition, the mismatch is due to recognizing the derivatives at inception, while an anticipated transaction that may be hedged is not recognized in the balance sheet. Resolving these mismatches can be achieved by hedge accounting via aligning the measurement of the hedging instrument and the hedged item and postponing the recording of certain gains or losses on the hedging instrument or accelerating the recognition of gains or losses on the hedged item (KPMG 2006). cit in (Mahmoud & Allah, 2009)

In accordance with IFRS 9, Hedge Accounting is aligned with management activities. Risk components of both a financial and non-financial nature will be classified in Hedge Accounting.

Hedge accounting is optional, however, an entity that applies hedge accounting designates a hedge relationship between a hedge instrument and an item to be hedged. For hedging relationships that meet the criteria defined in IFRS 9, the gain or loss of the instrument and the hedged item will be accounted according to with that same hedge accounting standard, IFRS 9. (Pacter, 2016)

IAS 39 required terminating the current hedge relationship and starting the new one. In practical terms, it is seen as to start all over again. IFRS 9 came with an easier solution allowing rebalancing a hedge -i.e. modify the hedge by adjusting a hedge ration for risk management purposes. It's usually performed when the quantities of a hedge instrument or a hedged item change. So, it allows certain changes to the hedge relationship without the necessity to terminate it and to start the new one (Mahutova, 2013).

IFRS 9 will impact firm-specific factors that affect investors' perceptions, hence increasing the shareholder value. For all the peculiarities there have been many studies on the pre-adoption of IFRS 9;

Onali and Ballestra study the market reaction with the information asymmetry influence by investigating the investors' reaction to the standard-setting process of IFRS 9 for over 3000 European listed firms. The study reveals that higher pre-adoption information quality and lower pre-adoption information asymmetry have a positive impact on the market adjusted return. And that financial firms react worse than non-financial firms to IFRS 9 adoption events. The

investor's views rely on the expected costs and benefits on the adoption. (Onali, Ginesti, & Ballestra, 2017)

In Onali previous study made in 2014, he already had concluded to be a positive reaction by the investors to this accounting reform, they are more confident that IFRS 9 will address the problems inherent in IAS 39. (Onali & Ginesti, 2014)

“Therefore, IFRS 9 should decrease the degree of asymmetric information, especially for international investors, and increase the value relevance of accounting data for investment decisions (Chen et al., 2013). Eventually, this should lead to lower cost of capital (Armstrong et al., 2010).” Cit in (Onali & Ginesti, 2014)

Ginestri and Ballestra were not the only ones pointing at costs, Pawsey study the costs of IFRS adoption in Australia and point out that this transition imposed significant costs, mostly in staff training and system upgrades impacting a range of organizational functions and responsibilities, that requires external expertise and significant resources. (Pawsey, 2017)

IASB has been working in on the IFRS 9 project for more than 9 years it actually started pre the financial crisis and it's has taken slidably different path because of the financial crisis, it has had multiple versions and the can be quite confusing so there was a 2009 version, a 2010 version, a 2013 version, and now this is the 2014 version. (Bruce, Spooner, & Patel, 2014)

Therefore, what this really does is take all that previous versions and makes mementos and also introduces new stuff which culminates in this 2014 version.

IFRS 9 is not to be seen as a real substitute but as an upgrade, it maintains several points, of IAS 39.

As to derecognition, the basic principle was carried over from IAS 39, the basic premise is to determine whether the asset under consideration for derecognition.

Although published in July 2014, IFRS 9 will only become effective as of January 1, 2018 (IFRS.ORG, 2018)



## **Derivative Classification**

Nowadays derivatives are a very important instrument for the companies, however they are not easy to classify, on their own equity whose net amounts are affected both independent variables and dependent variables. From previous we noticed that it can have both an equity and a liability independently of each other and changes in equity or in a liability are not recognized equally.

They can exist as on own equity, as standalone derivative, or could be embedded in another non-derivative host financial instrument (e.g. a hybrid instrument).

To classify a derivative on own equity it requires striking a balance between representing the characteristics of equity and liability as also striking a balance between the cost and the complexity of depicting the characteristics separately instead of a whole.

If a derivative was classified in their entirety as an asset or a liability it could provide useful information in assessing assets positions and financial performance in another hand it would lead to inconsistent classification between the equity and the obligation to deliver equity instruments.

## **Fair Value**

Fair value accounting assets and liabilities are presents in the balance sheet. Changes on the futures price determine changes in the fair values of the futures contract. An increase (decrease) in the fair value of the futures contract results in a gain (loss) on the futures contract. (Hwang, 2002)

Publicly traded stock exchange companies are required to prepare and include the fair value on the balance sheet.

It was said that fair value accounting can contribute to excessive debt in difficult periods and that could lead to an excessive depreciation, this write-downs deplete bank capital forcing banks

to sell assets at settlement prices, which can lead to prices contagion, one bank becomes relevant for other banks, although this can not be seen as an indicator of fair value measurement. (Laux, Christian; Leuz, 2010)

Fair value must be decided on a hierarchy using evaluation tecnics based on the quality of the inputs in order to improve transparency and comparability, this quality is sensible to active market parameters and often seen as estimative, imprecise.

Kašparovská study on the Czech banking system concludes that the professional public view the benefits in terms of the adjustment and content/definition of the fair value. That most of the inquired banks agreed that distinguish of the input levels to determine the fair value although, only concerning securities and derivatives and without any expectation to envisage any significant increase in the share of instruments measured at fair value. (Kašparovská, Gläserová, & Laštůvková, 2014)

Claudia Carvalho published her dissertation on the same year with similar results, between the different professional interests of the respondents of the study, based on different groups of stakeholders involved in the process of the replacement of IAS 39 the financial preparers had greater evidence of a preference for measurement at fair value. (Carvalho et al., 2014)

Fair Value Hedge, is like a wall to limit the exposure of a recognition of an asset at fair value to a liability or to an unrecognized firm commitment. The derivative gain or loss effectively offsets the hedged item loss or gain. This gains or losses resulting from changes in the fair value recognized directly on the income. Losses and gains resulting in this changes are attributable to the risk being hedged, the difference is reflected in the income. (Hwang, 2002)

2008 crisis raised a focus on Fair Value accounting, many where the ones blaming the imprecision of the existing statements at that time, that it contributed significantly to the financial crisis. However, studies like Duh et al. (2012), Badertscher et al. (2012) and Laux and Leuz (2010) came to disprove it.

Despite criticism of Fair value accounting of been the major influencer of the financial crisis, regardless of any role that fair value accounting played in the Financial Crisis, it is important to recall that it is the responsibility of bank regulators, banks were originating more and riskier loans, the investors not only had difficulty evaluating the quality of loans banks originated but

also had difficulty evaluating the fair value and risk of Special-Purpose Entities after the initial transfer of assets.

Not only the loans but also the impairments can be held as responsible, for bank capital ratios were calculated based on financial statement amounts, the recognized asset impairments caused many banks to sell impaired assets to generate cash, which they used to repay the debt and maintain required capital ratios. This procedure of deleveraging by banks had macroeconomic effects.

Contrary to what many critics of fair value contended, fair value accounting played little or no role in the Financial Crisis. However, transparency of information associated with measurement and recognition of accounting amounts relating to, and disclosure of information about, asset securitizations and derivatives likely were insufficient for investors to assess properly the values and riskiness of affected bank assets and liabilities.

Since every so often the objectives of bank regulation differ from the objective of financial reporting, changes in financial reporting requirements to improve transparency of information are needed to strengthen the stability of the banking sector and economy. (Barth, 2010)

Laux and Leuz (2010) said that it mid had been downward spirals or asset-fire sales in certain markets but the empirical evidence points to the overvaluation of bank assets.

Deriving far value can be very complex, it leads companies not to disclose fair value information which is a serious concern for all the shareholders and investors in general. Less information increases investor uncertainty and downplays the potential of the companies.

Before 2008 accounting was more flexible. On Laux and Leuz (2010) paper they have study banks assets between 2004 and 2006 (pre-crisis) and they found that the biggest position on bank balance sheets, the held-for-investment loan portfolio, was not subject to fair value accounting and it was subject to weaker impairment standards. On available-for-sale securities, fair value accounting played a limit role, charges where recognized only in “other comprehensive income”, but not in the income statement, unless the asset was sold or other than temporarily impaired, on changes of available-for-sale debt securities where not affecting the regulatory capital, unless the asset was sold or also temporary impaired. The reported fair values were too low and even more serious, the write-downs more excessive. Banks were unable to observe inputs and models in determining fair value, so it was difficult to realize whether they

were used or not for contagion effects, they have used the discretion in the accounting rules to keep asset values high relative to concurrent market prices and expectations. They have disclaimed that those banks, investors would have worried about exposures to subprime mortgages and made their own judgments, even in the absence of fair value disclosures.

Even being applied from January 2018, IFRS 9 is still being amended, currently, the IASB is planning to publish a proposal to clarify which fees and costs a company includes in a quantitative '10 percent' test for assessing whether to derecognize a financial liability. (IFRS.org, 2017)

### **3. Hypothesis and Methodology**

Following the theoretical framework previously developed, this chapter establishes a link between the previous background and the empirical analysis to be developed in this study. Consequently, the following sections will outline in detail the hypothesis and the methodological lines that will be developed in the context of this dissertation. Using the theoretical background set out above, the main hypotheses are developed. Then, the methodology is described, namely, the population and the period of the study, the variables used, and the statistical analysis methods of the information collected.

In this context, the hypotheses raised by this research are presented, followed by the description of the data collection process, and presentation of the relevant elements related to the target population, and other data related to the statistical analysis are presented. Finally, the techniques used for the processing of the data based on the objectives previously defined are exposed.

#### **Hypotheses**

The studies carried out in recent years show an increase in the concern about the IFRS adoptions, namely in risk management, on financial derivatives, generating a growing need for the dissemination of more information, with repercussions on business and on financial reports.

In this context, sustainability reports are an important instrument of communication of the strategy and the true and proper image of companies to all interested parties. At the same time, the number of companies accessing the capital markets and at the same time concluded by an increase in public interest and concern for the environment, with intangible assets and with social responsibility, generates a need for increased disclosure of information by companies, within corporate financial reporting, making voluntary information unavoidable.

The present dissertation intends to analyse the practices undertaken by Portuguese companies listed on European stock exchange (Euronext) on their financial instruments accounting present in IFRS 9 and compare them with the non-US companies listed in the New York Stock Exchange.

Derivatives Financial Instruments will be the main object of analysis of the studies that will be developed.

From the review of the literature, it was verified that country's specific characteristics, such as culture and legal framework, can lead to different interpretations and difficultness on statements adoption (Houque et al., 2012), which could indicate that will be differences on the objects in the study.

As stated above, the main objective of the empirical part of this research is to analyse the practices on financial instruments present in IFRS 9.

On that line of concern, the first objective present in this study was to verify if Portuguese companies were behaving differently if in opposition to the other market in the study (NYSE). In this sense, the following hypothesis (H1) was defined:

**H1: Financial Derivatives disclosure is similar in both markets.**

One of the most crucial points of IFRS 9 it is to improve Risk Management by allying it with better transparency on financial statements. But this will only matter if companies are aligning their risk management with proper financial instruments.

Taking all that on account, it was important to understand the companies in the study, therefore, the second hypotheses intends to evaluate their characteristics:

### **H2: Company size is determinant on Financial Derivatives Disclosure.**

Auditors purportedly tightened the quality standard of financial reporting. The choice of auditor (BIG\_4) is a common proxy for the quality of the audit undertaken .Therefore, the last hypotheses mean to test the influence of auditing, in relation to disclosure.

### **H3: Audit (Big 4) influence derivatives disclosure.**

Therefore, based on the review of literature previously presented, the qualification of the respondents will be made based on the following distinction: Euronext for the Portuguese companies in Euronext Lisbon and NYSE for the non-American companies present on the New York Stock Exchange.

With these hypotheses the aim is to answer the previously exposed goals:

- Do companies in Portugal make use of financial derivatives products?
- Do Portuguese companies disclose proper information on their financial derivatives instruments?
- What are the characteristics of companies with better disclosure?
- Is audit important on company's disclosure?

The next sections focus on population presentation, identification of variables, statistical techniques used, as well as other relevant data for the definition of the methodology for this research.

## **Methodology**

This section addresses data presentation and the methodology adopted in order to test our hypothesis empirically. Throughout this chapter we will describe the data sample, the variables and statistical methods used.

Following the theoretical framework previously developed, it was essential to choose the research procedures in order to collect information and data, as well as their interpretation and analysis.

The methodology of research and information gathering is, therefore, a process of selection of research strategy that already determines the choice of techniques of data collection.

It began with an exploratory study through which it was intended to obtain relevant information about the object of study, through a review of the existing literature.

This study follows the deductive approach since it uses systemic concepts, part of a theory that intends to confirm (Theory> Hypotheses> Observation> Confirmation).

The intention of the content analysis is the deduction of knowledge concerning the conditions of production, conclusion that it uses quantitative indicators or not. To perform a content analysis on any subject, it is essential to have a basis on which to base all the work. The constitution of the corpus is, therefore, an indispensable condition.

The research began with an exploratory study through the relevant information about the object of study, over the research methodology used in this study, and in relation to the bibliography, published works were consulted, articles, in particular, websites and interviews on websites were consulted.

At the level of empirical evidence, a content analysis of the annual reports, where applicable, of companies listed on Euronext Lisbon and on NYSE Euronext between the year of 2015 and 2017.

Content analysis has been widely used in accounting research -i.e. the application of annual reports to analyse various issues such as social, environmental, research and development disclosures.

In order to find the independent variables, the qualitative analyses were built under the data retrieved from Bloomberg.

Methods of data analysis depend on the objectives to be achieved. In this case, and considering the number of variables that we intend to test at the same time, the univariate analysis methods were used, where each variable is treated separately, using descriptive statistics, and multivariate analysis, as (Reis, 1997) where relations are established between more than two variables, using factorial analysis of main components. Which seeks to establish the relationship between the factors and voluntary disclosure.

These differences will be examined in the light of two criteria: the first analysis will be based on annual reports in order to build a financial index on derivatives disclosure, inspired on previous works as Moreno, Fernández, and Olmeda (2006) and Lopes and Rodrigues (2006), the second concerning the qualification of the index with the information collected on the data platform.

Based on the above, this study was developed, from which data were collected that, after being statistically treated, will be presented and analyzed in the following chapter.

## **Sample**

Many previous studies were faced with the difficulty in collecting information, thus, the object of our study is the listed companies, upon which there is a legal obligation to present public reports on accounts.

The population is made up all the companies listed on Euronext Lisbon, with a total of 53 companies. In comparative terms, we also gathered the population of companies listed on the NYSE Euronext, based on the software Bloomberg.



The Euronext Lisbon is at this moment the single Portuguese stock exchange.

In recent years, the Exchange has been aware of important and far-reaching from the legal framework itself, to its functional structure and to the negotiation.

Euronext is the first pan-European stock market and one of the largest markets' fellowships worldwide. Created by the merger of the Paris, Brussels, Amsterdam, subsequently the London derivatives market and, in 2002, Euronext Lisbon and Porto (Lisbon and Porto's stock exchange merged in 1999), Euronext enabled the Portuguese capital market to accompany the development of international scholarships and to enable investors and an international exhibition, giving them privileged access to endowed with high depth and liquidity.

At the moment Euronext Lisbon has only 53 listed companies consequently the study included all. (Table 10)

On the moment of selection, NYSE had 2460 listed companies making a total of 2420806058B Market Capital, on the first selection 40% on the Market Capital was posted apart, remaining 152 Companies. However, the subject of this study is on IFRS, therefore, it needed to exclude the ones who weren't adopting the IFRS, this selection was made posteriorly when analysing the annual reports, remaining only 43 companies. Notwithstanding, the Market capitalization of the 43 NYSE companies is more than double the Euronext 53. (Table 2)

## **Variables**

### **Dependent Variable**

The applicability of IFRS 9 it is going to rely on the use of companies for financial instruments, so it was imperative to access the improvement of financial information on derivative financial instruments.

In order to assess the company's disclosure of financial information on financial derivatives, it was taken into account the construction of a financial information index, based on previous works as Moreno et al. (2006) and Lopes and Rodrigues (2006)

The index serves as an information indicator to assess the disclosure of information provided by companies. The attributes considered in the preparation of the indicator take as reference the main information requirements recognized in standards adopted, audit, risk and use for financial derivatives, selecting a total of fourteen variables (Table 12).

In its construction, the presence of the required information is valued positively giving it a positive value (1); the absence of the data is scored as zero (0), the information not being weighted according to the nature and quality of the information provided on each item. In this sense, the use of a measurement scale for each variable (for example from one to five or a *Linker* scale) is not considered adequate, given the practical difficulty of obtaining objective evidence on the quality of the reported data, as well as the lack of a benchmark for its qualification, it does not weight disclosures according to the nature of the disclosures. Admitting that sometimes the information about certain elements required can be improved, its presence is always positively valued although it does not mean that the revealed data is completely adequate.

The VRDI, calculated as per Eq. (1):

$$VRDI_j = \sum_{i=1}^{nj} \left( \frac{x_{ij}}{n_{ij}} \right) \quad (1)$$

Where: VRDI<sub>j</sub> stands for Voluntary Reporting Disclosure Index for a set of accounts for firm j; n<sub>j</sub> is the number of items in the index for firm j; x<sub>ij</sub> is a dummy variable which takes values 1 if the item is disclosed and 0 if the item is not disclosed by firm j. (Chalmers & Godfrey, 2004)

The annual financial reports of each company in the sample for the period 2015–2017 are searched. The score of 1 (0) is assigned to each item of information disclosed (not disclosed). A total score is calculated by summing up the scores assigned to each of the information items. The Companies VRDI for each year expressed as a percentage (VRDI<sub>xy</sub>) is measured by dividing the total score by the maximum possible score. Statistical tests are performed using both the firm's VRDI for a particular year and a dichotomous classification of whether the firm is a disclosing firm (VRDI>0%) or non-disclosing firm (VRDI=0%). A potential bias is

introduced in the study by categorizing firms not using derivative instruments and making no disclosure to this effect as 'non-disclosing companies. However, firms in this category exerted a disclosure choice.

The working hypotheses were based on the idea that listed companies in an organized market, would use financial derivatives in the management of their risks.

### **Independent Variables**

For the predictive variables or the determinants of the underlying hypotheses of the study, it was defined as independent variables, only the ones that serve as a proxy for the phenomenon or the economic reality that we intend to capture. These variables were selected based on the propositions identified in similar studies.

The Pawsey (2017) study in Australia ,revealed that IFRS adoption led to a significant increase in liabilities, and a significant reduction in equity and retained profits, although no significant impact on total assets or earnings was identified.

Total Assets has been also extensively used as a control variable (Marques, Albuquerque, & Cariano, 2017) (Abdel-khalik & Chen, 2015) (Chalmers & Godfrey, 2004) (Duh et al., 2012) (Pereira & Gaspar, 2017) (Lopes & Rodrigues, 2006) (Onali et al., 2017) (Zhang, 2009) (Laux & Leuz, 2010). For a better analysis, it will be used logarithm active of total Assets as (Onali et al., 2017).

Firm LOGASSETS, is the size of the companies, is included as a control variable because it is expected larger concern over the risks, and thus are expected to have a higher derivative score.

As stated before, a financial instrument is a contract of an entity that gives rise to a financial asset, a financial liability or an equity instrument to another entity. And different accounting treatments of derivatives impact firms' equity and Liabilities, IAS 39 allows entities to designate, at the time of acquisition, any loan or receivable as available for sale, in which case it is measured at fair value with changes in fair value recognized in equity. (Duh et al., 2012), as many studies now suggest that greater disclosure and transparency (that is arguably associated with fair value accounting) is related to a lower cost of equity capital (Botosan (1997); Hail (2002); Hail and Leuz (2006)). Cit in (Chatham et al., 2010)

Thus being two of the independent variables will be Equity and Liabilities, used before in many studies as (Ashbaugh-skaife & Collins, 2005) (Duh et al., 2012) (Lopes & Rodrigues, 2006) (Zhang, 2009) (Gong & Wang, 2016) (Hwang, 2002) (Lim et al., 2013).

Although, Equity as Liabilities will be used as LEVERAGE. As stated previously, the leverage of multinational corporations, including specifically intra-group leverage, may be an evidence of risk. (Ashbaugh-skaife & Collins, 2005) (Duh et al., 2012) (Zhang, 2009) (Lim et al., 2013) (Christensen, Lee, & Walker, 2015) (Neves, 2016) (Houque et al., 2016) . Leverage enables an assessment of the congruency between the two theories., in this case, the relation of Liabilities over the company's total Equity. Leverage also facilitates an examination of the complementary nature of applying alternative paradigms to financial accounting information production decisions.

In Moreno et al., (2006), it was proved that leverage as higher level of indebtedness leads to a bigger use of financial instruments, furthermore Christensen and Walker ( 2015) stands that lower the leverage more likely more likely to be audited by a larger auditor.

Profitability is measured as return on assets, the variable profit was calculated using the variable available in Bloomberg Income over total Assets. Hwang (2002) have previously used profits for comparative analysis of accounting treatments for derivatives.

In theory, the greater the quality of the audit it supervises, the higher the quality of the data presented. In that line of thought, Big 4 auditor firms should provide better auditing reports and stronger monitoring, and there for bigger disclosure. Many studies before have use it as an indicator variable; (Onali et al., 2017) (Abdel-khalik & Chen, 2015) (Marques et al., 2017) (Onali et al., 2017) (Adznan & Nelson, 2014) (Pawsey, 2017) (Christensen et al., 2015) (Chalmers & Godfrey, 2004) (Houque et al., 2016)

Companies have the possibility to include in their annual accounts the mention expressed to the non-use of financial derivatives in their risk management activities.

After controlling the named variables, the next step was to investigate whether ownership concentration affects derivative disclosure. VRDI was regressed for each company in each year, which is the dividend VRDI, on different variables (same model used in (Fernandes & Sacadura, 2001)):

$$VRDI_{i,t} = \alpha_i + \beta_1 \log ASSETS_{i,t} + \beta_2 LEVERAGE_{i,t} + \beta_3 PROFIT_{i,t} + \beta_4 Big4_{i,t} + \varepsilon_{i,t} \quad (2)$$

Table 2 attends to better understanding over the variables:

**TABLE 2** VARIABLES DESCRIPTION

| Variables | Measurement  |
|-----------|--|
| LOGASSETS | Natural logarithm of total assets  |
| LEVERAGE  | Calculated from Equity divided by Liabilities  |
| PROFIT    | Calculated from Income divided by Total Assets   |
| BIG 4     | Indicator variable equal to 1 if the firm was audited by the big four auditors, and 0 otherwise. |

### Research Statistical Analysis Methods

The statistical analysis used for the purposes of the present investigation include different information collection and statistical analysis techniques. The statistical analysis performed on the first stage, in order to organize data and variables was done in Excel, and later for the purposes of the current study, more advanced econometric analysis was performed using the STATA (Software for Statistics and Data Science).

The first part of the analysis consisted to analyse the voluntary disclosure on financial derivatives information, using univariate analysis on the construction of the indice, and the inter-relations between the Index on the calculation of the score, and the independent variables, on the other hand, was based on descriptive statistics, in which each variable is analyzed separately. The techniques used include descriptive and exploratory analysis of the data. To that end, the analysis will encompass frequency analysis and descriptive measures, namely average, median and standard deviation. For the purposes of the analysis that underlies the Hypothesis. The dependent variables will be classified in 1 and 0, in accordance with the respective values representing a value superior or inferior to the median of the respective sample for a given independent variable per year.

Another statistical procedure used to test the Hypotheses includes the non-parametric tests of Wilcoxon, which are designed to identify the existence of significant differences between the groups of entities included in the analysis in a bivariate perspective. Those test has been used, in similar circumstances, in research by (Ashbaugh-skaife & Collins, 2005), (Zhang, 2009) and (Christensen et al., 2015).

Multivariate logistic regression analysis is used to test the Hypotheses, this represents the method consistently employed to find out any relations in the previous international and national research. Additionally, we use logistic regression to explore significant differences between blocks of independent explanatory variables or their coefficients. Both tests were conducted to test the consistency of the model in parallel with the statistical significance of the parameters generated by the regression.

This study used Pearson statistic such as standard derivation, heteroscedasticity, kurtosis and the product-moment correlation coefficient. (Ashbaugh-skaife & Collins, 2005) (Lim et al., 2013) (Abdel-khalik & Chen, 2015) (Duh et al., 2012) (Houqe et al., 2016) (Pereira & Gaspar, 2017) (Zhang, 2009)

As far as the analysis of the correlations between the Score (Index) and independent variables (size and profitability), on the other hand, the independent variable data. The classification methodology was necessary to avoid that the correlation between the variables in the multivariate analysis applied in the models of logistical regression since the size variable is equally present in the variables.

Finally, to better test panel data it was used the techniques of Fixed and Random effects, regressions with and without robustness where adjusted to analyse the variables.(Barniv & Myring, 2015; Fernandes & Sacadura, 2001; Gong & Wang, 2016; Hodder et al., 2006; Houque et al., 2016)

Fixed effects are commonly used to analyse the impact of variables over time

## 4. Findings and Discussion

This chapter is designed to present the results obtained on each of the three studies, based on the data collected, the statistical techniques and on the empirical research conducted in relation to the hypothesis and methodology presented in the previous Chapter.

After controlling the named variables on the previous chapter: Logassets, Leverage, Profit and Big 4, it is important to investigate whether company size and characteristics affect the derivative disclosure. For each company “i” in year “t”, it was calculated a regression for the score, which is the derivatives disclosure in relation to the different variables:

**TABLE 3** SUMMARY STATISTICS

| <b>Overall</b>  | <b>Mean</b> | <b>St.Dev</b> | <b>min</b> | <b>max</b> | <b>skewness</b> | <b>kurtosis</b> | <b>N</b> |
|-----------------|-------------|---------------|------------|------------|-----------------|-----------------|----------|
| VRDI            | 0.586       | 0.249         | 0          | 1          | -0.804          | 2.737           | 279      |
| logassets       | 9.266       | 4.022         | 0          | 19.103     | -0.232          | 2.532           | 279      |
| leverage        | 1.301       | 7.145         | -0.533     | 104.305    | 11.724          | 159.903         | 279      |
| profit          | 0.005       | 0.234         | -2.912     | 0.389      | -10.196         | 118.918         | 279      |
| big4            | 0.814       | 0.39          | 0          | 1          | -1.611          | 3.594           | 279      |
| <b>EURONEXT</b> |             |               |            |            |                 |                 |          |
| VRDI            | 0.501       | 0.263         | 0          | 0.929      | -0.565          | 1.944           | 153      |
| logassets       | 6.412       | 2.92          | 0          | 14.183     | 0.002           | 4.064           | 153      |
| leverage        | 1.98        | 9.596         | -0.533     | 104.305    | 8.653           | 87.672          | 153      |

|             |        |       |        |        |        |        |     |
|-------------|--------|-------|--------|--------|--------|--------|-----|
| profit      | -0.024 | 0.307 | -2.912 | 0.26   | -8.02  | 70.379 | 153 |
| big4        | 0.804  | 0.398 | 0      | 1      | -1.531 | 3.344  | 153 |
| <b>NYSE</b> |        |       |        |        |        |        |     |
| VRDI        | 0.689  | 0.184 | 0.214  | 1      | -0.711 | 3.147  | 126 |
| logassets   | 12.731 | 1.88  | 9.322  | 19.103 | 0.751  | 4.455  | 126 |
| leverage    | 0.476  | 0.562 | 0.031  | 3.246  | 2.358  | 10.235 | 126 |
| profit      | 0.041  | 0.069 | -0.054 | 0.389  | 3.081  | 14.956 | 126 |
| big4        | 0.825  | 0.381 | 0      | 1      | -1.714 | 3.939  | 126 |

Table 3 presents the summary statistics for the main variables used in our analyses over the years 2015–2017. The table contains results for the full sample and then by market, for better analyses; The mean value of VRDI is 0.501 for EURONEXT and 0.689 for NYSE, suggesting that IFRS adopters in NYSE give better disclosure on their derivatives by an average of 18,80%. This table provides summary statistics. The variables in Table 3 were defined in Table 2. VRDI is the result of the index, logassets variable is the natural logarithm of total assets. Leverage is Equity over Liabilities. The profit calculated from Income divided by total Assets. And the Big4 Indicator variable equals one if the firm’s auditor is PricewaterhouseCoopers, KPMG, Deloitte or Ernst & Young, and zero otherwise.

**TABLE 4** PAIRWISE CORRELATIONS

| Variables     | (1)    | (2)    | (3)     | (4)    | (5)   |
|---------------|--------|--------|---------|--------|-------|
| (1) VRDI      | 1.000  |        |         |        |       |
| (2) logassets | 0.484* | 1.000  |         |        |       |
| (3) leverage  | -0.120 | -0.120 | 1.000   |        |       |
| (4) profit    | 0.004  | 0.123  | -0.372* | 1.000  |       |
| (5) big4      | 0.367* | 0.029  | 0.047   | -0.079 | 1.000 |

\* shows significance at the .01 level

This table reports correlations among the variables used in the regressions. Detailed definitions of the variables are provided in Table 2



Table 4 reports Pearson correlations between the dependent and the independent variables in study, it shows the level of correlation between variables. Leverage has a negative correlation of -0.120 showing that a more leverage company is less likely to have better disclosure. The stronger correlation with VRDI are logassets and big4.

The application of the theoretical linear regression model for the index considered as a dependent variable, taking into account the different determinants analyzed in this study.

**TABLE 5** LINEAR REGRESSION

| VRDI               | Coef.    | St.Err               | t-value | p-value | Sig. |
|--------------------|----------|----------------------|---------|---------|------|
| logassets          | 0.026    | 0.003                | 8.15    | 0.000   | ***  |
| leverage           | -0.004   | 0.002                | -1.97   | 0.050   | **   |
| profit             | -0.067   | 0.055                | -1.22   | 0.222   |      |
| big4               | 0.239    | 0.031                | 7.70    | 0.000   | ***  |
| Mean dependent var | 0.586    | SD dependent var     | 0.249   |         |      |
| R-squared          | 0.381    | Number of obs        | 279     |         |      |
| F-test             | 33.663   | Prob > F             | 0.000   |         |      |
| Akaike crit. (AIC) | -107.764 | Bayesian crit. (BIC) | -85.977 |         |      |

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Akaike information criterion (AIC)

Bayesian information criterion (BIC)

Table 5 consists on the application of the theoretical linear regression model to allow to estimate the value of discretionary accruals for each firm in the years 2015–2017. Discretionary accruals were estimated from the values of errors and waste ( $\epsilon_{it}$ ) obtained from the application of the model itself which allowed us to identify evidence of earnings management. From the analysis it is verified that the set of proposed determinants explains 38.1% of the variation on the VRDI.

However, there is evidence of a statistically significance and positive relationship for the determinants logassets and big4.

**TABLE 6** VARIANCE INFLATION FACTOR

|           | VIF  | 1/VIF |
|-----------|------|-------|
| profit    | 1.18 | .851  |
| leverage  | 1.17 | .855  |
| logassets | 1.02 | .977  |
| big4      | 1.01 | .991  |
| Mean VIF  | 1.09 | .     |

A VIF > 10 or a 1/VIF < 0.10 indicate the existence of multicollinearity, which did not happen. Therefore, it suggests the absence of this problems among the variables in the regression model.

**TABLE 7** LINEAR REGRESSION BY MARKET  
LINEAR REGRESSION: MARKET1 = EURONEXT

| VRDI               | Coef.   | St.Err               | t-value | p-value | Sig. |
|--------------------|---------|----------------------|---------|---------|------|
| logassets          | 0.042   | 0.006                | 7.20    | 0.000   | ***  |
| leverage           | -0.004  | 0.002                | -2.10   | 0.038   | **   |
| profit             | -0.071  | 0.054                | -1.32   | 0.190   |      |
| big4               | 0.325   | 0.039                | 8.45    | 0.000   | ***  |
| _cons              | -0.032  | 0.048                | -0.66   | 0.511   |      |
| Mean dependent var | 0.501   | SD dependent var     |         | 0.263   |      |
| R-squared          | 0.509   | Number of obs        |         | 153.000 |      |
| F-test             | 30.518  | Prob > F             |         | 0.000   |      |
| Akaike crit. (AIC) | -72.417 | Bayesian crit. (BIC) |         | -54.234 |      |

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Linear regression: Market2 = NYSE**

| VRDI      | Coef.  | St.Err | t-value | p-value | Sig. |
|-----------|--------|--------|---------|---------|------|
| logassets | -0.027 | 0.009  | -3.13   | 0.002   | ***  |
| leverage  | -0.046 | 0.033  | -1.38   | 0.172   |      |

|                    |         |                      |       |         |     |
|--------------------|---------|----------------------|-------|---------|-----|
| profit             | -0.750  | 0.269                | -2.79 | 0.006   | *** |
| big4               | 0.049   | 0.046                | 1.06  | 0.292   |     |
| _cons              | 1.047   | 0.131                | 8.03  | 0.000   | *** |
| <hr/>              |         |                      |       |         |     |
| Mean dependent var | 0.689   | SD dependent var     |       | 0.184   |     |
| R-squared          | 0.175   | Number of obs        |       | 126.000 |     |
| F-test             | 5.075   | Prob > F             |       | 0.000   |     |
| Akaike crit. (AIC) | -81.666 | Bayesian crit. (BIC) |       | -64.648 |     |

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

After checking for the statistical significance of the parameters for the total sample, it is imperative to separate markets. The two variables that are statistically different from zero at 1 % significance level exhibit stronger impact on EURONEXT than in NYSE, specially the coefficient of Big4.

This finding comes to complement studies made on Portuguese market as (Marques et al., 2017), they have compared Financial Expenses and Returns Reported by Entities Listed in Portugal and found evidence of a statistically significant and positive relationship with Big 4.

On the other hand as showed by NYSE market and for the previous study's (Adznan & Nelson, 2014) on Malaysian Market or (Houque et al., 2016) how used 16 European countries, Big4 did not had statistical impact, so is not always a variable with statistic impact.

Nevertheless, Portugal is not the only country who shows evidence of Big4 impact, Chalmers, Keryn and Godfrey, Jayne on their study in Australian market reveal that the percentage of disclosing firms audited by Big 6 firms exceeds the percentage of disclosing firms not audited by Big 6 firms throughout the 1992–1996 period. (Chalmers & Godfrey, 2004)

Second bigger influencer on EURONEXT disclosure was total assets, in NYSE this relation inverses. While in the EURONEXT this variable shows a positive correlation, in NYSE this correlation is negative.

Results show that leverage companies show less information.

**TABLE 8** EVALUATION BETWEEN SENSITIVITY TESTS

| Euronext     | Fixed Effects<br>Regression | Fixed Effects<br>Regression<br>Robust | Random<br>Effects<br>Regression | Random Effects<br>Regression<br>Robust |
|--------------|-----------------------------|---------------------------------------|---------------------------------|--|
| logassets    | 0.045***<br>(0.005)         | 0.045***<br>(0.006)                   | 0.630***<br>(0.073)             | 0.630***<br>(0.077)                    |
| leverage     | -0.004**<br>(0.002)         | -0.004***<br>(0.001)                  | -0.051**<br>(0.024)             | -0.051***<br>(0.013)                   |
| profit       | -0.071<br>(0.054)           | -0.071***<br>(0.020)                  | -0.996<br>(0.750)               | -0.996***<br>(0.276)                   |
| big4         | 0.321***<br>(0.038)         | 0.321***<br>(0.030)                   | 4.496***<br>(0.536)             | 4.496***<br>(0.420)                    |
| Constant     | -0.040<br>(0.048)           | -0.040<br>(0.046)                     | -0.560<br>(0.667)               | -0.560<br>(0.637)                      |
| Observations | 153                         | 153                                   | 153                             | 153                                    |
| R-squared    | 0.506                       | 0.506                                 | 0.506                           | 0.506                                  |

| Nyse         | Fixed Effects<br>Regression | Fixed Effects<br>Regression<br>Robust | Random<br>Effects<br>Regression | Random Effects<br>Regression<br>Robust |
|--------------|-----------------------------|---------------------------------------|---------------------------------|--|
| logassets    | -0.027***<br>(0.009)        | -0.027***<br>(0.010)                  | -0.382***<br>(0.122)            | -0.382***<br>(0.135)                   |
| leverage     | -0.048<br>(0.031)           | -0.048<br>(0.030)                     | -0.672<br>(0.432)               | -0.672<br>(0.425)                      |
| profit       | -0.746***<br>(0.267)        | -0.746***<br>(0.139)                  | -10.450***<br>(3.737)           | -10.450***<br>(1.949)                  |
| big4         | 0.046<br>(0.043)            | 0.046*<br>(0.027)                     | 0.642<br>(0.596)                | 0.642*<br>(0.377)                      |
| Constant     | 1.052***<br>(0.127)         | 1.052***<br>(0.131)                   | 14.727***<br>(1.781)            | 14.727***<br>(1.839)                   |
| Observations | 126                         | 126                                   | 126                             | 126                                    |
| R-squared    | 0.174                       | 0.174                                 | 0.174                           | 0.174                                  |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Coefficient applied and based on asymptotic Z-statistic robust to heteroscedasticity and country clustering effects (Houqe et al., 2016).

It was conducted a number of robustness tests and the obtained results were consistent with the results presented above, thus confirming the statistical and economic significance of our parameters.

Table 8 serves to compare Linear regression with Robust.

Linear regression models are widely used in several areas of study, but these may present some problems under certain conditions, which are very common to observe in real data. Therefore, one of the possible solutions is the use of robust methods of linear regression estimation, capable of mitigating or even correcting these problems.

By using Fixed and Random effects specification we were able to control for the effect of time-invariant characteristics across our data sample, avoiding individual firm's attributes to drive the results.

Fixed effects are commonly used to analyse the impact of variables over time exploring the relationship between predictor and outcome variables, it removes the effect of time to better analyse the net effect of the predictors on the outcome variable.

Random Effects on another hand, is assumed to be random and uncorrelated, with the predictor or the independent variables included in the model. This model assumes that the dependent variable/entity error is not correlated with the predictors, and it allows to generalize influences and inferences beyond the sample. However, it is necessary to specify the individual characteristics that may or may not have an influence in the predictor variable.

The FE model will always give consistent estimates, although, they may not be the most efficient, if the error terms are correlated, then, FE is not suitable for the inferences may not be correct.

In order to assess which model is the most appropriate it is necessary to perform the Hausman Test.

**TABLE 9** HAUSMAN TEST

| Variables | (b)<br>Fixed | (B)<br>Random | (b-B)<br>Difference | Sqrt (diag (V_b-V_B))<br>S.E. |
|-----------|--------------|---------------|---------------------|-------------------------------|
| logassets | 0.262        | 0,029         | -0.003              | 0.0101                        |
| leverage  | -0.004       | -0.003        | 0.000               | .                             |
| profit    | -0.671       | -0.069        | 0.002               | .                             |
| big4      | 0.239        | 0.225         | 0.137               | 0.004                         |

b = consistent under Ho and Ha; obtained from regress

B = inconsistent under Ha, efficient under Ho; obtained from regress

Test: Ho: difference in coefficients not systematic

**Hausman (1978) specification test**

|                       | Coef. |
|-----------------------|-------|
| Chi-square test value | 6.06  |
| P-value               | .195  |

The Hausman test evaluates the difference between the FE and RE, in order to see if there is a significant difference between them.

The Hausman test uses a Chi-Square distribution with the degrees of freedom equal to the number of parameters of the time-varying regressors.

Both models could be applicable, yet, if the test is significant the FE must be used.

## 5. Conclusions, Limitations and Future Research

This last part of this work is intended to disclose the main conclusions obtained from the studies made, considering the assumptions previously defined and based on the results presented above.

Evidence shows that derivatives disclosure for EURONEXT was 50.10 %, and for NYSE this disclosure was 68.90%. NYSE presents a better disclosure in 18.80%.

As per Moreno et al., (2006), higher level of indebtedness lead to use of derivatives, higher the leverage poorer the disclosure (coefficient of -0.004 on EURONEXT and -0.048 on NYSE). However the results obtained from our empirical model show a bigger influence on the relationship of the company size, analysed by LOGASSETS. Despite of having influence in both markets, total assets have a surprising negative influence on NYSE companies.

It was also analyze the effect of the type of audit, and while it has showed influence in both markets, this influence is stronger in EURONEXT, which indicates to the conclusion that for Portuguese companies to be audited by a Big 4 causes impact on the quality of their report.

The point of view of most of the studies considers the full capacity of the companies to weigh the cost benefit obtained from a greater transparency compared to the market, incorporating in addition to the financial variables that determine their size others that may have a direct impact on the revealed data. That is why bigger companies tend to have more disclosure and leverage ones less.

Even if it didn't showed much pre-adoption (for EURONEXT there was only one company) which would lead for the same conclusion of Lopes and Rodrigues (2006), there was a preparation and testing for this new statement, that could show a bigger effect on financial companies. This point was not tested in this study; however it is very interesting for a future one.

Financial instruments have always been a dubious and complex issue, which has led the IASB to respond for 6 years. Is IFRS 9 simpler and clearer, although, they recomendation would be to continue, include the adoption year, three more and the comment letters on "Financial Instruments with Characteristics of Equity", they are to be releaste on January 7<sup>th</sup> 2019 (Paper, 2019)

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## 7. Appendix

**TABLE 10** LIST OF EURONEXT LISBON COMPANIES

- |                       |                        |
|-----------------------|------------------------|
| 1. ALTRI SGPS         | 26. NEXPONOR-SICAFI    |
| 2. B.COM.PORTUGUES    | 27. MOTA ENGIL         |
| 3. BANCO BPI          | 28. MEDIA CAPITAL      |
| 4. BANCO SANTANDER    | 29. MARTIFER           |
| 5. BANCO SANTANDER    | 30. LUZ SAUDE          |
| 6. VAA VISTA ALEGRE   | 31. LISGRAFICA         |
| 7. TOYOTA CAETANO     | 32. J.MARTINS,SGPS     |
| 8. THE NAVIGATOR COMP | 33. ISA                |
| 9. TEIXEIRA DUARTE    | 34. INAPA-PREF S/ VOTO |
| 10. SUMOL+COMPAL      | 35. INAPA-INV.P.GESTAO |
| 11. SPORTING          | 36. IMPRESA,SGPS       |
| 12. SONAECOM,SGPS     | 37. IMOB.C GRAO PARA   |
| 13. SONAE IND.SGPS    | 38. IBERSOL,SGPS       |
| 14. SONAE CAPITAL     | 39. GLINTT             |
| 15. SONAE             | 40. GALP ENERGIA-NOM   |
| 16. SEMAPA            | 41. FUT.CLUBE PORTO    |
| 17. SDC INV.          | 42. F.RAMA             |
| 18. SAG GEST          | 43. EURONEXT           |
| 19. REN               | 44. ESTORIL SOL N      |
| 20. REDITUS,SGPS      | 45. EDP RENOVAVEIS     |
| 21. PHAROL            | 46. EDP                |
| 22. PATRIS            | 47. CTT CORREIOS PORT  |
| 23. OREY ANTUNES ESC. | 48. CORTICEIRA AMORIM  |
| 24. NOVABASE,SGPS     | 49. COMPTA             |
| 25. NOS, SGPS         | 50. COFINA,SGPS        |

51. BENFICA

**TABLE 11** LIST OF NYSE COMPANIES

- |   |                                    |
|---|------------------------------------|
| 1. BT Group plc                             | 21. Lloyds Banking Group Plc       |
| 1. BCE, Inc.                                | 22. Bank of Nova Scotia (The)      |
| 2. RELX N.V.                                | 23. Itau Unibanco Banco Holding SA |
| 3. Bank Of Montreal                         | 24. Rio Tinto Plc                  |
| 4. Orange                                   | 25. Westpac Banking Corporation    |
| 5. RELX PLC                                 | 26. Diageo plc                     |
| 6. Barclays PLC                             | 27. Toronto Dominion Bank (The)    |
| 7. Banco Bradesco Sa                        | 28. Astrazeneca PLC                |
| 8. Suncor Energy Inc.                       | 29. BHP Billiton Limited           |
| 9. Honda Motor Company, Ltd.                | 30. Banco Santander, S.A.          |
| 10. Banco Bradesco Sa                       | 31. GlaxoSmithKline PLC            |
| 11. America Movil, S.A.B. de C.V.           | 32. Novo Nordisk A/S               |
| 12. America Movil, S.A.B. de C.V.           | 33. BP p.l.c.                      |
| 13. Sumitomo Mitsui Financial Group<br>Inc  | 34. Sanofi                         |
| 14. Banco Bilbao Viscaya Argentaria<br>S.A. | 35. Total S.A.                     |
| 15. Petroleo Brasileiro S.A.- Petrobras     | 36. SAP SE                         |
| 16. Statoil ASA                             | 37. Unilever PLC                   |
| 17. Telefonica SA                           | 38. HSBC Holdings plc              |
| 18. UBS AG                                  | 39. Anheuser-Busch Inbev SA        |
| 19. Banco Santander Brasil SA               | 40. Taiwan Semiconductor           |
| 20. ING Group, N.V.                         | 41. Manufacturing Company Ltd.     |
|   | 42. Novartis AG                    |
|   | 43. BANCO SANTANDER                |

**TABLE 12** INDEX OF FINANCIAL INFORMATION ON FINANCIAL DERIVATIVES INFORMATION

| Information  | Ratings |
|--|---------|
| Does the company specify the accounting policy followed with financial derivatives?  | 1 (0)   |
| Does the company specify its risk coverage policy?   | 1 (0)   |
| Does the company specify the objectives pursued with the use of derivatives (coverage or negotiation)?   | 1 (0)   |
| Does the company report how it controls or monitors the risks associated with financial derivatives?   | 1 (0)   |
| Does the company give information about the contract guarantees?   | 1 (0)   |
| Is information provided on the internal control procedures followed by the company in the supervision of financial derivatives?                        | 1 (0)   |
| Does the company Describes the different categories of risks to which it is subjected in the exercise of its activities?                               | 1 (0)   |
| Does the company contribute segregated data by type or category of risks supported (interest rate, change, etc.) in relation to financial derivatives? | 1 (0)   |
| Does the company provide the follow-up information about Notional or facial value of financial instruments traded?                                     | 1 (0)   |
| Does the company provide the follow-up information about Market value of financial instruments used, as an indicator of assumed risk?                  | 1 (0)   |

Does the company provide the follow-up information about Procedure used to determine the market value of positions? 1 (0)

Does the company provide the follow-up information about Rate of interest or final price after coverage (as an indicator of the efficiency of coverage)? 1 (0)

Does the company provide data on the counterpart of the derivatives traded or coverage? 1 (0)

Does the company value the credit risk incurred at the end of the year for the possession of financial derivatives? 1 (0)

---

**Total maximum score obtainable 14**

**Score  $\Sigma$  Rating / 14**

---

**TABLE 13** LIST OF IFRS 9 EARLY ADOPTERS

| COMPANY   | COUNTRY                 | EURONEXT | SECTOR                      | FINANCIAL | BIG4                  |
|---|-------------------------|----------|-----------------------------|-----------|-----------------------|
| BT Group plc  | British                 | NYSE     | Public Utilities            | 0         | KPMG                  |
| BCE, Inc.   | Canadian                | NYSE     | Public Utilities            | 0         | Deloitte              |
| Bank Of Montreal                                      | Canadian                | NYSE     | Finance                     | 1         | KPMG                  |
| Suncor Energy Inc.                                    | Canadian                | NYSE     | Energy                      | 0         | 0                     |
| Banco Bradesco Sa<br>America Movil, S.A.B.<br>de C.V. | Brazilian<br>Mexican    | NYSE     | Finance<br>Public Utilities | 1<br>0    | KPMG<br>Ernst & Young |
| UBS AG  | Swiss                   | NYSE     | Finance                     | 1         | Ernst & Young         |
| ING Group, N.V.                                       | Dutch                   | NYSE     | Finance                     | 1         | KPMG                  |
| Bank of Nova Scotia<br>(The)                          | Canadian<br>Australian- | NYSE     | Finance                     | 1         | KPMG                  |
| Rio Tinto Plc   | British                 | NYSE     | Basic Industries            | 0         | PWC                   |
| Astrazeneca PLC                                       | British                 | NYSE     | Health Care                 | 0         | KPMG                  |
| HSBC Holdings plc                                     | British                 | NYSE     | Finance                     | 1         | KPMG                  |
| Taiwan Semiconductor<br>Manufacturing<br>Company Ltd. | Taiwanese               | NYSE     | Technology                  | 0         | 0                     |
| Novartis AG   | Swiss                   | NYSE     | Health Care                 | 0         | PWC                   |
| TEIXEIRA DUARTE                                       | PORTUGAL                | EURONEXT | CONSTRUCTION                | 0         | Ernst & Young         |