

# Mark-to-market Accounting Implications for Banks Trading Portfolios

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*We analyze an extensive database of EU15 banks for 1999-2007. From the banks reports adopting IFRS in 2004 and presenting their results as both local and IFRS, we discover that fair value accounting application reveals riskier portfolios than the image presented if they would have been continued to present the results according to the historic cost accounting. The trading portfolios profits are higher with fair value accounting than with the historic cost accounting regime. After IFRS adoption, the banks are adjusting their portfolios year by year towards more conservative portfolios, coherent with the predictions of the recent analytical literature.*

## 1. Introduction

### 1.1 The mark-to-market regulation framework

The debate on the relative merits of fair value accounting (or mark-to-market) for financial instruments with respect to historical cost accounting has attracted a lot of attention in the recent years. The compulsory or voluntary adoption of IAS/IFRS by 100 countries around the world is certainly behind the resurgence of this debate, because the set of IAS/IFRS standards is perceived to be more "fair value" based than the previous systems of national standards that it has substituted. Only in Europe there are 7,000 listed companies for which IFRS application is mandatory.

However, the importance of this reporting method for the financial markets around the world comes not only from its actuality and intended global area of compliance, but it is augmented by the still unclear, even lengthy debated, contradictory preponderant expected effects: positive, according to sustainers, and negative ones, according to its opponents.

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This regulatory change is a debatable topic not only for academic researchers, but also in financial press and politicians agenda, arriving at such a point to be blamed for "exacerbating the credit crunch" (e.g. Economist, Sept 2008) or being mentioned for urgent need of revision according to the recent G20 Summit (G20 London Summit, 2009). In particular, the adoption of IAS 39 (and of its US equivalent SFAS 133) and recently IFRS 9 (the replacing standard), which extend the use of fair value to a large set of financial assets, including derivatives, has been particularly controversial.

Resuming the debate, as Plantin et al. (2008) notes, the fair value accounting sustainers argue that the use of market prices for preparing accounting reports is beneficial to investors and authorities, as transmitting more relevant information on the firm current risk profile than the historical cost of the instruments. According to their logic, this will induce a higher market discipline and will allow the financial statements users to make better capital allocations. Moreover, the market-oriented models, internally used by the firms, are assumed to explain better the firm reality to the outsiders, as opposed to the previous book value system.

Another more pragmatic argument in favor of the fair value accounting usefulness is the derivatives treatment. The historic cost accounting treatment was registering their original acquisition value, which is closely zero, while their exposure was very high.

On the other hand, the opponents of fair value accounting signal the unreliability of the new accounting numbers and blame the artificial volatility and the pro-cyclical effects induced by the fair value accounting. The critics of the fair value accounting reporting system, mainly European banks and insurance companies, are founding their arguments exactly on the standard setters' assumptions. When the secondary markets for firm's assets and liabilities are not efficient (i.e. are not deep and liquid), the fair value accounting would decrease rather than increase the reliability of the financial statements. This is exactly the case of the banks and insurance companies, with "soft" secondary markets (ECB (2004)). Plantin et al. (2008) exemplifies with the OTC market for loans. Also, as ECB (2004) notes, it can be problematic the case of credit risk models and valuation methods of illiquid or non-traded instruments, not suitably developed to the date. It is worthy of mention that the French banks led the opposition to the fair value accounting introduction (Financial Times

(2004)).<sup>1</sup> The European Commission (2001), a constant supporter of the financial institutions in their dispute with the fair value initiators, considers that "substantial additional evidence needs to be assembled to support the underlying assertion that fair value is superior to historical cost for all financial instruments and that fair value can (subject to a minor exception) always be determined reliably".

A second argument against the fair value accounting is that it will bring "artificial", or additional volatility into the financial reports, hence in financial markets. This "artificial" volatility is supposed to be a consequence of fair value accounting adoption, without reflecting the underlying fundamentals (Plantin et al. (2008) and ECB (2004)). To see the perceived impact of this new source of volatility, one can cite for example the Danish regulators fear that the induced "artificial volatility" could even destabilise their financial system (The Economist (2004)).

The third argument against the fair value accounting adoption, used by the financial institutions, is that the fair value system is not properly reflecting the way in which they manage their core business, dedicated especially to long-term decisions, and less concerned with short-term variations (Geneva Association (2004)).

Not only companies are against the fair value reporting: regulators are aware about the implied managers' possibility of earnings manipulations, based on the freedom offered by the estimations, when the markets are not available (ECB (2004)). The same report is signalling also that fair value reporting could exaggerate the economic cycles, through its pro-cyclical effects.

Such an important topic like fair value reporting for financial instruments has naturally attracted the interests of the scientific community. The majority of the efforts in the last decade are studies testing whether the fair value disclosure/recognition is helping the financial statements users. This is a natural research question, as being the basis of the proposed change argument. Barth (2000), Barth et al. (2001), and Landsman (2005, 2007)

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<sup>1</sup> According to *Financial Times* (31 March, 2004), the ex-president Chirac "*made an unusual foray into accounting last year to say the IASB's rules could have "nefarious consequences" for Europe's economies*". J. Laurent, CEO of Credit Agricole, France's second largest listed bank, says it will not implement IAS 39 without changes. "*You are going to have banks where no one will understand the accounts*," he says. "*The managements are not going to be able to manage the business*." D. Bouton, chairman of Societe Generale, France's third largest listed bank, says: "*The IASB adopted rules that are not only inappropriate and misleading for users of financial statements but also will have a very significant negative impact on the financial statements and possibly on the economy as a whole*."

realize comprehensive reviews of the measurement and the value relevance issues treated by the fair value literature. While the Joint Working Group of standard setters conclude that the "case for the superior relevance of fair value measurement is supported by a growing body of market-based research" (JWG (2000)), the academic literature finds that there are necessary additional efforts to support the relevance and reliability of the fair value indicators, especially in the case of instruments not transacted in liquid markets.

## **1.2 The mark-to-market regulation lack of neutrality**

In recent years, both academic researchers and professional associations draw attention to a general phenomena, that includes the previously described arguments for and against the fair value accounting introduction: the accounting regulation lack of neutrality. They predict economic consequences of the fair value accounting adoption in terms of real decisions of the firms, in particular portfolio allocations effects. As stressed, for example, by Shin (2007), "the key to the debate on fair value accounting is how behavior is affected by the accounting regime".

The cited survey of Geneva Association (2004), realized with CEOs of insurance companies, represents one of the pioneer studies of this topic. It predicts a negative impact for banks and insurance companies' activity, by shortening their planning horizons, changing the risk management practices and reducing their risk appetite: "the introduction of a full fair value reporting system would significantly change the business strategies, corporate policies and systems over time in a way that most companies consider would reduce their competitiveness".

It is important to mention that the accounting policy makers are focusing when designing standards, on the quality, transparency and comparability of the accounting numbers such that to help the users of the financial reports to make economic decisions, without explicitly considering the interaction between accounting and the financial decisions of a portfolio manager. The IASB main declared objective is "to develop, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require high quality, transparent and comparable information in

financial statements and other financial reporting to help participants in the world's capital markets and other users make economic decisions "(IASB (2010)).

However, as Beatty (2007) remarks, "standard setters should be interested in how economic behavior changes as a result of their standards even if the standards do not take these changes of behavior into account", making a reference at the former vice-chair of the Financial Accounting Standards Board viewpoint.<sup>2</sup>

Another research study, Barth (2006), realized by an important scholar and member of the IASB, considers the following unsolved problem a "motivating question for future research": "How will greater use of fair value in financial statements affect investor or management behavior? Are these effects simply a natural consequence of providing neutral and transparent information, or do they reflect a lack of neutrality in fair value? If the latter, what is the cause of the lack of neutrality?"

As long as the financial decisions induced by different accounting standards are not the primary concern of the standard setters, hence not completely estimated when designing accounting standards, their study is badly needed for both regulators, practitioners and academic community. I present in the next section an overview of the studies dedicated to this topic.

### **1. 3 Review of the relevant literature on mark-to-market consequences**

The literature on the effects of the adoption of fair value accounting for financial instruments and derivatives on portfolio choice decisions has developed only very recently and it concentrates exclusively on the financial industry, the main user of financial instruments.

Only few analytical works were dedicated to this topic.

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<sup>2</sup> Leisenring (1990) says that "*unfortunately, it is once again fashionable to suggest that the FASB should abandon the notion that decision-useful information must be neutral and should consider the 'economic consequences' of its decisions. Some would even assert that the FASB should try to determine in advance who will be relatively helped or hurt by the result of applying a particular accounting standard, and consider 'public policy implications' when it establishes accounting standards. In a word, bias the information reported to influence the capital allocation or other economic decisions toward some predetermined objective, thereby undermining the proper functioning of the capital markets and impairing investors' and creditors' capital allocation decisions.*"

The first study in our overview that involves a fair value analytical model is O'Hara (1993), and the particular analyzed context is the fair value effect on loans maturity. The author finds that, when asymmetric information exists, fair value reporting introduces a bias into asset valuation against longer-term illiquid assets (such as loans). The bias arises because of difficulty in establishing market prices for assets in presence of private information, a well-known characteristic of banks activity, requiring specific information and expertise.

Burkhardt and Strausz (2004) is also concerned with bank loans analysis, subject to either historic cost or fair value accounting treatment. The paper, as the previous one, is an extension of Akerlof's lemons problem and finds how historical cost regime can induce underinvestments.

Freixas and Tsomocos (2004) study the effects of fair value accounting on the banking system and its capacity to act as a facilitator of intertemporal smoothing. The study shows another banking vision of the two accounting regimes consequences: profits are more variable under fair value than historic cost accounting. However, the assumptions are quite different from the usual arguments of the fair value sustainers and opponents, making the study singular: in this case, profits "smoothing" is viewed as a desirable action. This is in contradiction with the classical critics to historic cost accounting, of allowing managers to manipulate firm performance by "smoothing" profits in order to present a more stable activity.

Plantin et al. (2008) is a study of the costs and benefits of the two accounting regimes: historic cost vs. fair value. It distinguishes by the unique complexity of answers to the hypothesized effects of fair value accounting application. The authors present a model whose outcomes explain why, in general, a financial institution should be distressed by the introduction of a marking-to-market regime. The most affected in terms of induced "artificial volatility" are the institutions whose portfolio consists of long-term, illiquid, and senior (i.e. limited upside risk, but a possible downside risk) assets. One can identify these qualities as the major characteristics of bank assets (loans) or insurance liabilities (in the reinsurance market), explaining why banks and insurance companies were the most vocal opponents of the fair value regime.

Allen and Carletti (2008) tackled also the issue of the link between the accounting regime and the functioning of financial markets and it highlights the possibility that fair value can hinder the stability of these markets. Notwithstanding the different settings, all these papers question the alleged superiority of the "new" fair value regime with respect to the "old" historic cost.

On the contrary, Bleck and Liu (2007) prove the superiority of the fair value regime as an incentive device in an agency setting. The use of historic cost allows "bad" managers to hide the results of their ill strategy, whereas fair value enable a quicker reaction from the shareholders.

From an empirical point of view two studies are closely related to our analysis.

Zhang (2009) adopts an archival approach to study the effect of the adoption of SFAS 133, which requires the use of fair value accounting for derivatives in the US, on corporate risk-management behavior. Using a sample of US companies that use derivative as part of their risk management strategy, she divides them into "Effective Hedgers" and "Ineffective Hedgers/Speculators". Her analysis shows that volatility of cash flows and risk exposures related to interest rate, foreign exchange rate, and commodity price decrease significantly for "Ineffective Hedgers/Speculators" firms but not for "Effective Hedgers" firms, after IFRS adoption.

Lins et al. (2009) study the same topic through a worldwide survey with 358 valid responses from non-financial firms. They found that a significant amount of the respondent companies have altered their risk-management strategies as a consequence of the introduction of fair value accounting for derivatives. According to the results, the overall level of hedging activities decreased together with the use of non-linear hedging instruments.

The cited literature advocates that the adoption of fair value accounting is not neutral for the portfolio selection decisions of the financial institutions. It proves, mainly analytically, that the accounting regulation is not indifferent for a portfolio manager. The balance sheet and respectively income values are not identical for the same economic reality, when different accounting systems are in force. It also proves that in environments where the accounting numbers count, the firms, depending on their objectives, are adjusting their

portfolios when the regulation imposes a change from the Historical Cost regime (pure or with impairment) to the Fair Value accounting. In particular the change to Fair Value accounting leads to a more conservative portfolio, depending on the severity of the impairment rule in force during the historic cost regime.

The objective of the present study is to realize empirical tests of the hypotheses developed in the previous analytical studies.

With this objective in mind, our interest is to capture the portfolio decisions of European financial companies -banks and similar- around the adoption of IFRS framework in the period surrounding the year 2005. We concentrate on the financial companies (hereinafter called banks) for a couple of reasons: mainly, the analytical models from the previous works mimic these companies behavior, the banks were at the forefront of the debate against the fair value accounting introduction and finally they have a great proportion of financial assets in their balance sheets.

The IFRS adoption event, "one of the most significant regulatory changes in accounting history" according to Daske et al. (2008), imply major changes with respect to the use of the fair value concept in accounting, as it is the object of IFRS 36 and IFRS 39, and recently IFRS 9. This way it represents an inflection point for the accounting regulation from the Historic Cost to Fair Value accounting that enables us to test our predictions.

We analyze the European banks because they are mandated (the listed ones) to adopt IFRS starting with 2005 and we focus on the countries belonging to the European Union of 15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom. The analyzed period is 9 years: 1999-2007. By starting before the critical year 2005 we can check for the potential anticipation decisions of the accounting rules. In case of Spain, due to data availability, this period is prolonged until 2009 for a sub-sample of 20 commercial banks, in order to incorporate the financial crisis period.

The banks activity is complex and we divide it into "traditional banking" (receiving deposits and conceding loans) and the "trading" activity, the last one representing the portion of the activity where the banks are operating as brokerage houses or institutional investors. We concentrate in the present work at the banks trading activity, the most

affected activity by the accounting change in Europe. Hence, in order to test our assumptions about portfolio decisions influenced by the accounting changes, we have to separately look at the trading activity of the banks.

Following the analytical models from the previous works, we identify in the banks' balance sheets the accounting values of both fixed income instruments and risky ones from the trading portfolio. We also look separately at the accounting income values corresponding to the trading activity from the whole figure of the income, to identify the performance of the trading portfolio, as it is reflected into the financial statements.

Using these items- fixed income, risky instruments and income values corresponding to the banks trading portfolio- we develop our hypotheses testing born from the results of the theoretical works.

The first assumption is linked with the specificity of the period when the IFRS adoption is mandatory. The adoption happens around the year 2005<sup>3</sup>, a good period of the economy (the annual returns of S&P 500 for the period 2004-2007 were 9%, 6%, 10% and 5% respectively), and it ends before the recent major financial crisis commence. In other words, it is a "good period" of the economy, when the risky instruments increase more than the fixed income ones, hence the ratio Risky instruments/Total instruments to be higher when measured with mark-to-market accounting, and the accounting profits to be also higher when measured as mark-to-market, instead of historical cost accounting. We expect the following hypothesis referring to the effects of the two accounting regimes application for the same economic reality to be true:

**Hypothesis 1: 1a. *The fair value accounting adoption around the year 2005 reveals a significantly riskier trading portfolio than the image presented if the banks would have been continued to present the results according to the historic cost accounting.***

**1b. *the accounting profits of the trading portfolio are higher with fair value accounting than with the historic cost accounting regime.***

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<sup>3</sup> See Table 1 for the distribution of adoption years

Given the specificity of the analyzed settings -- trading portfolios of the European banks- we hypothesize that the IFRS adoption is not neutral and induces more conservative portfolios, i.e. after IFRS adoption the banks are reducing their risk appetite, as the theoretical models in the recent literature predict. We predict the portfolio adjustments are significant because the previous accounting regime before IFRS adoption was more closed to a pure historic cost accounting<sup>4</sup> than to a lower of the cost and the market, and in line with the previous literature (in particular Geneva Association (2004)). We assume hence the following hypothesis to be true:

**Hypothesis 2: *The fair value accounting introduction reduces the risk appetite of banks.***

Indeed, we will prove in the present paper how the previous hypotheses are true.

From a special sample of 318 firms that adopted IFRS in 2004 and which present their results as both local (i.e. at historic cost) and IFRS (i.e. as fair value) for this year, we discover that the fair value accounting application reveals a significantly riskier trading portfolio than the image presented if the banks would have been continued to present the results according to the historic cost accounting. For the same year the accounting profits are higher with fair value accounting than with the historic cost accounting regime. When analyzing by countries, we discover how the French banks present an opposite pattern: they are negatively affected by the fair value accounting introduction. By using the entire samples, we observe that after IFRS adoption, the firms are slowly adjusting their trading portfolios year by year towards more conservative portfolios, coherent with the predictions of the analytical models.

The rest of the paper is structured in the following way: in Section 2 we present our research design and the sample used, in Section 3 the univariate tests used, in Section 4 the multivariate analyses, and Section 5 concludes our results.

## **2. Research Design and data used**

### **2.1 Research design**

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<sup>4</sup> Ramirez and Calvo González-Vallinas (2006) explains how the impairment tests are made under the local standards only when the market value of the financial instruments decrease within a significantly large proportion from the acquisition value and moreover the depreciation should not be perceived as temporary

Though we are interested in banks portfolio decisions, we don't have direct information about the financial transactions. Instead, we have to base our judgment on the financial statements items the banks are issuing. However, when comparing financial instruments balance sheet values at different moments in time we have to take into account that the following three phenomena can arise.

First, the balance sheet values can be distinct at different moments in time because of the market prices of the corresponding instruments evolution in time; assuming the accounting system in force is the same at both moments, and the portfolio composition is exactly the same, there can appear differences in the balance sheet values of the financial items only because the market values of the financial assets change. Depending on the accounting regime in force (historic cost or fair value) and its local country interpretation, the market price changes can be reflected in a different measure in the balance sheet (e.g. in case of fair value accounting, the entire change is reflected in the balance sheet, while in case of the historic cost accounting regime, only downward moves are captured in the balance sheet, and the magnitude depends on the enforcement of the specific impairment rule).

A second case is the opposite phenomenon. Due to transactions (buying or selling decisions) with financial instruments, the balance sheet value of a given category (fixed income or risky instruments) can change in time. It is the case when the accounting regime remains the same at both moments in time, the market values of the instruments are the same, but the company realizes transactions with financial instruments and the accounting balance sheet positions of fixed income and respectively risky instruments change.

As long as we don't have information about the transactions realized, we cannot distinguish between the previous two phenomena. We have to carefully design the analyses taking into account this remark.

The third phenomenon augments even more the difficulty of the balance sheet values comparison. In the special case when the accounting regime in force is different for the two analyzed periods, the balance sheet values can be different even if the portfolio is

exactly the same and the market prices are identical. In this case the difference is due only to the accounting system in force.

The previous three remarks draw our attention to an initial difficulty of realizing a study on the portfolio decisions effects influenced by the accounting systems and they may represent one of the explanations why there are no similar studies available in the literature up to now.

Our research plan takes into account the discussed limitations of the financial statements information and it starts with some univariate analyses and continues with multivariate ones. The first univariate analysis of section 3 eliminates the first two limitations described above, by presenting a special sample of banks issuing two financial reports at the same moment in time (the IFRS adoption year), for which there are no differences with respect to portfolio composition or market prices, the only difference being the accounting regime applied. It represents an opportunity to separate the accounting effects. We extend then the univariate analysis to a time horizon containing the adoption year and we realize also some difference in difference analyses scenarios, to be able to distinguish portfolio effects in time.

The multivariate analyses in section 4 start with checking *Hypothesis 1*: we want to prove with the aid of regressions that by applying fair value accounting, the *Proportion Safe Ratio* diminishes and the *Results of Financial Operations* increase. We want to capture also the trends after IFRS adoption with the two mentioned indicators, in other words whether *Hypothesis 2* is supported. Finally, the third series of regressions are analyzing the heterogeneity of the IFRS impact for different countries composing the EU15.

## **2.2 Sample description**

The principal data source used in the present work is Bankscope. The data collection represents the second and the major difficulty for realizing a study on portfolio decision influenced by the accounting standards, not only the drawbacks identified in the section 2.1 from above. The difficulty comes from the fact that the variables we need for our analysis- fixed income instruments, risky instruments and income values-, corresponding to the

banks trading portfolios, as they are presented in the banks' financial reports, are not available directly in the Bankscope database.

The original data base provides Global Items referring to relevant categories data from the financial reports of the banks. These Global Items contain standardized information, computed directly by the provider from the original reports of the banks. The items advantage is they are homogeneous across all the countries analyzed and across years, but the drawback is that they are quite general and are not allowing us to have a sufficiently deep view of the financial reality of the firms in the sample.

To address the problem of detailed items we processed the original data from Bankscope database, and this represents the most time-consuming part of our data-base construction. We create this way a second and a third sub-data base, both of them containing detailed items. The second sub-data base, called Global Detailed, is a generalization of the data base of Global Items. It preserves the main structure of the database Global Items but contains more items. The third sub-data base, called Raw Detailed, is a step further from Global Detailed, where even more detailed items are added. In this case the information is not preserving the structure from Global Items, but this sub-data base is useful in case we need a particular item not found in Global Detailed. These two new sub-data bases have the advantage of allowing us to access very detailed accounting items needed in our analysis, but their difficulty is they consist in a huge number of different items, because of the different formats of presenting the data (apart of the IFRS format, the banks are presenting the detailed results as Local GAAP for the pre-adoption years, and the names of the items are changing in time and are also different across countries). There are 3,563 distinct items names for the Global Detailed sub-data base and even more, 5,382 distinct items names for the Raw Detailed format.

We construct the variables needed for our analysis from the items of the two sub-data bases from above.

After describing the way variables are created, we proceed to construct the sample of banks for which we make the analysis. The first phase of the sample collection is the following. We collect the detailed items for the financial reports of all the banks from the countries belonging to EU15 during the period 1999-2007. There are 7,350 European banks and for each bank we have a number of yearly reports, as a maximum 9. By starting

the analysis before the critical year 2005 we can check for the potential anticipation decisions of the accounting rule.

With all the banks from EU15, we create in the first phase an unbalanced panel data with 7,350 bank entities. The composition of the panel of 7,350 banks is the following: 1,226 banks have Consolidated Reports and 6,124 have Unconsolidated Reports. The same entity can present both consolidated and unconsolidated reports, however we are not mixing the two types of reports in our analysis. Also, from the 7,350 banks, 617 of them refer to Listed Companies (261 for Consolidated and 356 for Unconsolidated Reports) and the rest of 6,733 are Unlisted Companies. Some of the banks in this sample are IFRS adopters. By adopters, we refer to those banks that adopted IFRS in a year before 2007 (inclusive), the last year in our sample. The IFRS adoption is mandatory for the consolidated reports of the listed banks, and it should be done in this case as late as in 2005.

In the second stage of the sample creation, we have eliminated from the initial sample some banks:

- 2 banks with incoherence about standards (in the Bankscope database these banks present incorrectly years with IFRS reports followed by years with Local GAAP)

- 11 banks listed and consolidated (hence mandatory adopters) that did not adopt, according to our database, until 2006 (inclusive), which are data base errors.

- 1,899 non-adopters banks with insufficient data, i.e. those banks that remain local and have coverage until 2004 or earlier; their coverage did not arrive at 2005 year, the mandatory adoption year.

After eliminating these 1,912 banks, we remain with 5,438 banks in the database for our analysis, of which 4,497 have Unconsolidated reports and 941 have Consolidated reports.

We analyze the 5,438 banks in terms of the IFRS adoption event. As Consolidated, there is only one bank that adopted IFRS in 2007; the rest of the adopters did this before or in 2006. As Consolidated and Listed, hence mandatory, there are 8 banks that adopted in 2006; even if they had to adopt IFRS in 2005 as late, we allow them in the database because some local rules allow the IFRS application postponing and because it could be the possibility they could not provide in time the 2005 IFRS reports for the provider; however, the 8 banks represent a small number of entities that could not significantly change our

results. Also, none of the Consolidated and Listed adopt in 2007. As Unconsolidated, there is only one firm adopting in 2007, the rest of the adopters did this before 2007.

A detailed description of the adoption years' distribution is presented in the next table:

|               | <b>Consolidated</b> | <b>Unconsolidated</b> |
|---------------|---------------------|-----------------------|
| Adoption year | No. of banks        | No. of banks          |
| Nonadopters   | 299                 | 3356                  |
| 1999          | 13                  | 4                     |
| 2000          | 8                   | 1                     |
| 2001          | 6                   | 1                     |
| 2002          | 3                   | 0                     |
| 2003          | 5                   | 1                     |
| 2004          | 412                 | 268                   |
| 2005          | 143                 | 833                   |
| 2006          | 51                  | 32                    |
| 2007          | 1                   | 1                     |
|               |                     |                       |
| <b>Total</b>  | <b>941</b>          | <b>4497</b>           |

Table 1. Distribution of adoption years

The detailed structure of the database of 5,438 banks is:

|                       | <b>Banks</b> | <b>Adopters</b> | <b>Non-adopters</b> |
|-----------------------|--------------|-----------------|---------------------|
| <b>Unconsolidated</b> | 4497         | 1141            | 3356                |
| Uncons. Listed        | 246          | 92              | 154                 |
| Uncons. Unlisted      | 4251         | 1049            | 3202                |
|                       |              |                 |                     |
| <b>Consolidated</b>   | 941          | 642             | 299                 |
| Cons. Listed          | 191          | 191             | 0                   |
| Cons. Unlisted        | 750          | 451             | 299                 |

TOTAL 5,438

Table 2. Sample composition

We present also the distribution of banks specialties for the Consolidated, respectively Unconsolidated bank reports in our sample:

|                                       | <b>Consolidated</b> | <b>Unconsolidated</b> |
|---------------------------------------|---------------------|-----------------------|
| Commercial Bank                       | 369                 | 1037                  |
| Savings Bank                          | 94                  | 771                   |
| Cooperative Bank                      | 110                 | 1819                  |
| Bank Holding & Holding Company        | 79                  | 67                    |
| Central Bank                          | 0                   | 15                    |
| Investment Bank/Securities House      | 99                  | 269                   |
| Islamic Bank                          | 1                   | 2                     |
| Medium & Long Term Credit Bank        | 18                  | 38                    |
| Non-banking Credit Institution        | 86                  | 293                   |
| Real Estate / Mortgage Bank           | 69                  | 154                   |
| Specialised Governmental Credit Inst. | 16                  | 32                    |
| <i>Total</i>                          | <b>941</b>          | <b>4497</b>           |

Table 3. Distribution of the institution profiles

We realize at this point a descriptive analysis of the variables we are using in our work. We consider the accounting values of both fixed income instruments (*Fixed Income*) and risky ones (*Risky Assets*) from the trading portfolio, their sum (*Total Instruments*), the proportion of the portfolio invested in safe instruments (*Proportion Safe Ratio*= *Fixed Income/ Total Instruments*) and the accounting profits of the trading portfolios operations (*Results of Financial Operations*). We analyze also two control variables, *Leverage* and *Size*, which we use in the regressions from Section 4. Except for variables with natural lower or upper bounds (i.e. the indicator variable we will introduce in our study), we truncate all variables at the first and 99th percentile.

We group in the next table the descriptive statistics of the main variables (panel A) used in the analyses, respectively the continuous control variables (panel B).

By checking the difference between the mean and the median of the variables we see the main variables are highly skewed, except the *Proportion Safe Ratio*, while this is not so evident for the control variables.

**Consolidated**

|                              | <b>N</b> | <b>Mean</b> | <b>Std.Dev.</b> | <b>P1</b> | <b>P25</b> | <b>P50</b> | <b>P75</b> | <b>P99</b> |
|------------------------------|----------|-------------|-----------------|-----------|------------|------------|------------|------------|
| <b>Fixed Income</b>          | 6117     | 8050        | 22888           | 0         | 35         | 373        | 2648       | 141732     |
| <b>Risky</b>                 | 6117     | 1997        | 8184            | -302      | 1          | 47         | 377        | 65377      |
| <b>Total Portfolio</b>       | 6117     | 10386       | 30496           | -14       | 96         | 600        | 3550       | 201631     |
| <b>Proportion Safe Ratio</b> | 6117     | 0.712       | 0.352           | 0.000     | 0.532      | 0.885      | 0.990      | 1.024      |
| <b>Res. of Financ. Oper.</b> | 6117     | 172.6       | 647.8           | -111.9    | 0.0        | 3.4        | 33.8       | 4716.0     |

### Unconsolidated

|                              | <b>N</b> | <b>Mean</b> | <b>Std.Dev.</b> | <b>P1</b> | <b>P25</b> | <b>P50</b> | <b>P75</b> | <b>P99</b> |
|------------------------------|----------|-------------|-----------------|-----------|------------|------------|------------|------------|
| <b>Fixed Income</b>          | 27431    | 869         | 3601            | 0         | 18         | 59         | 230        | 28392      |
| <b>Risky</b>                 | 27431    | 164         | 755             | 0         | 0          | 6          | 50         | 6464       |
| <b>Total Portfolio</b>       | 27431    | 1109        | 4345            | 0         | 26         | 83         | 335        | 33228      |
| <b>Proportion Safe Ratio</b> | 27431    | 0.772       | 0.300           | 0.000     | 0.664      | 0.909      | 0.995      | 1.000      |
| <b>Res. of Financ. Oper.</b> | 27431    | 5.5         | 29.6            | -12.8     | 0.0        | 0.0        | 0.5        | 251.4      |

Table 4 (Panel A). Descriptive statistics for the variables used in analyses. Main variables

### Consolidated

|                 | <b>N</b> | <b>Mean</b> | <b>Std.Dev.</b> | <b>P1</b> | <b>P25</b> | <b>P50</b> | <b>P75</b> | <b>P99</b> |
|-----------------|----------|-------------|-----------------|-----------|------------|------------|------------|------------|
| <b>Leverage</b> | 6117     | 0.90        | 0.12            | 0.18      | 0.90       | 0.93       | 0.96       | 0.99       |
| <b>Size</b>     | 6117     | 8.76        | 2.11            | 3.82      | 7.34       | 8.70       | 10.05      | 13.57      |

### Unconsolidated

|                 | <b>N</b> | <b>Mean</b> | <b>Std.Dev.</b> | <b>P1</b> | <b>P25</b> | <b>P50</b> | <b>P75</b> | <b>P99</b> |
|-----------------|----------|-------------|-----------------|-----------|------------|------------|------------|------------|
| <b>Leverage</b> | 27431    | 0.90        | 0.11            | 0.23      | 0.90       | 0.94       | 0.95       | 0.99       |
| <b>Size</b>     | 27431    | 6.57        | 1.85            | 2.93      | 5.29       | 6.32       | 7.66       | 11.93      |

Table 4 (Panel B). Descriptive statistics for the variables used in analyses. Continuous control variables

## 3. Univariate Analyses

### 3.1 Banks with double representation (local and IFRS)

The first analysis of our study is done with a particular sample of banks that switched to IFRS in 2004 and which present the financial results with double representation (both Local standards and IFRS). The characteristic of this analysis is that it perfectly captures the accounting effects on the portfolio (the third point discussed in section 2.1) without interfering with any portfolio transactions or market prices variables, the last two variables remaining constant. It provides two snapshots of the same economic reality (the same trading portfolio) viewed with different accounting regimes.

We identify 318 banks in our database for which we have double representation in 2004 (consolidated reports). We restrict first the analysis to the sample of 287 banks with both *Fixed Income* and *Risky Assets* (the main variables for this analysis) valid values as both Local

and IFRS such that to assure a constant sample providing us the correct comparability of the results. To the best of our knowledge, it is the first analysis of this type in the literature, explaining the difficulty of obtaining the data. Only some simulations with a small number of firms, treating only changes in income and equity due to the accounting regime switch, but without discussing portfolio allocation effects are available (see *The Economist*, Sept. 2008). The next tables report mean values of the variables of interest and the number of observations. The stars \*, \*\* and \*\*\* indicate statistical significance of differences in means at the 10%, 5% and 1% levels, respectively, based on two-sided *t*-tests.

| EUROPE                   | N   | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|--------------------------|-----|----------------|---------------|-----------------------|------------|-----------------|
| <b>Fixed Income</b>      | 287 | 7,777          | 5,144         | -2,633                | 0.0976 *   | -33.85%         |
| <b>Risky</b>             | 287 | 1,376          | 2,332         | 956                   | 0.1277     | 69.47%          |
| <b>Total Instruments</b> | 287 | 9,293          | 8,409         | -884                  | 0.6924     | -9.51%          |
| <b>Proportion Safe</b>   | 287 | <b>0.81</b>    | <b>0.58</b>   | <b>-0.24</b>          | 0.0000 *** | -29.10%         |
| <b>Results Fin Oper</b>  | 287 | 109            | 178           | 69                    | 0.1397     | 63.57%          |

Table 5. Indicators of interest presented according to both Local and IFRS accounting. EU15

We look first at the *Proportion Safe Ratio* in Table 5, which indicates us how much of the trading portfolio is safety invested, according to the information available in the banks' balance sheet reports, and at the performance measurement indicator (i.e. *Results of Financial Operations*).

The conclusions of the analysis at the EU15 level provide us very important results. First, there is a significant reduction of the *Proportion Safe Ratio* if it is presented as Fair Value instead of Historic Cost accounting. The Fair Value accounting reports reveal a more in line with the market risk profile of the banks' financial portfolio (on average, in reality only 58% of the portfolio is safely invested), while the image offered (in an inaccurate manner) by the old Historic Cost regime (as Local reports) was the banks have 81% of the portfolio safe. Also, the Fair Value accounting switch is beneficial in terms of *Results of Financial Operations* (178 instead of 109).

This result supports our *Hypothesis 1*: for the same economic reality, the fair value accounting adoption around the year 2005 reveals a significantly riskier trading portfolio than the image presented if the banks would have been continued to present the results according to the historic cost accounting. Also, the accounting profits of the trading

portfolio are higher with fair value accounting than with the historic cost accounting regime.

The direction of the changes observed in our case and supporting *Hypothesis 1* is due to the fact the accounting change happened in a good period of the economy. Opposite results would have been obtained if the accounting change would have happened in a bad moment of the economy. We have to remark from the present results not only that the direction of the change of the two indicators is in the estimated direction, but also the magnitude of the change, in favour of the value relevance of the fair value concept. The difference between the *Proportion Safe Ratio* and *Results of Financial Operations* values respectively for the two accounting regimes is significant, and it is the merit of the Fair Value Accounting to reveal us the market-based trading risk profile of the banks, significantly different from the value we would have inferred from the old accounting profits.

By looking at each component of the *Proportion Safe Ratio* in part we discover the following. At the European level, the *Fixed Income* instruments reduce their value from an average of 7,777 to 5,144 (millions of Euro). We can conclude an important characteristic of the Local standards (or the old Historic Cost accounting): the impairment rule, even if it was in force under the local standards, was not sufficiently effective; the downward adjustment of the *Fixed Income* value when applying the Fair Value accounting represents the proof for the impairment ineffectiveness. On the other hand, the higher value for the *Risky Assets* when presented as IFRS (2,332, instead of 1,376 with Local) is due to the fact the local standards (as historic cost regimes) were not allowing for the asset appreciation recognition in the balance sheet. As a net value, the IFRS application has a negative effect as long as the total value of instruments reduces from 9,293 to 8,409 with the IFRS application. Consequently, the reduction of the *Proportion Safe Ratio* with IFRS application discovered before is due to the fact the risky instruments increase more than the risk-free instruments (the last ones actually decrease).

However, we expect the impact of the fair value accounting not to be uniform amongst the European countries. The previous institutional positions of the French authorities against the IAS 39 adoption draw our opinion to the idea that the banks from this country would be the most affected by the fair value accounting introduction. We expect the

differences between the historic cost and the fair value accounting profits for the same economic reality to be more pronounced for the French banks and to disadvantage the banks from this country, contrary to the rest of the European countries. Looking separately at those individual countries for which we have sufficient data (Table 6), we discover the followings.

First, the impairment rule was not effective in the French origin countries: France, Italy, Netherlands and Portugal; for all these countries, the IFRS values of the *Fixed Income* instruments are lower than the corresponding values under local GAAP.

The *Risky Assets* increase in all of the analyzed countries, but not in the same proportion. The case of France is special: for this country, the *Risky Assets* improve the least comparing with the other countries. A possible explanation is that the local standards in France were more permissive with upward moves of the instruments. This way the Fair Value Accounting application when the *Risky Assets* improve with respect to the acquisition period does not change radically the value.

We observe that the financial results are improving in Italy, Netherlands, Portugal, Spain and UK and are worse in the same special case of France. By country: the most important 6 countries:

| FRANCE            | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|-------------------|----|----------------|---------------|-----------------------|------------|-----------------|
| Fixed Income      | 48 | 17,202         | 11,507        | -5,695                | 0.3824     | -33.11%         |
| Risky             | 48 | 4,839          | 5,661         | 822                   | 0.7778     | 16.99%          |
| Total Instruments | 48 | 21,929         | 18,163        | -3,767                | 0.6857     | -17.18%         |
| Proportion Safe   | 48 | <b>0.66</b>    | <b>0.26</b>   | <b>-0.40</b>          | 0.0000 *** | -61.11%         |
| Results Fin Oper  | 48 | 446            | 409           | -36                   | 0.8759     | -8.17%          |

| ITALY             | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|-------------------|----|----------------|---------------|-----------------------|------------|-----------------|
| Fixed Income      | 57 | 3,351          | 1,443         | -1,908                | 0.0618 *   | -56.93%         |
| Risky             | 57 | 380            | 2,262         | 1,882                 | 0.1282     | 495.17%         |
| Total Instruments | 57 | 3,731          | 4,200         | 470                   | 0.8167     | 12.59%          |
| Proportion Safe   | 57 | <b>0.88</b>    | <b>0.57</b>   | <b>-0.31</b>          | 0.0000 *** | -35.18%         |
| Results Fin Oper  | 57 | 42             | 95            | 52                    | 0.2464     | 124.40%         |

| NETHERLANDS       | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value   | Difference as % |
|-------------------|----|----------------|---------------|-----------------------|-----------|-----------------|
| Fixed Income      | 19 | 11,114         | 2,589         | -8,525                | 0.2677    | -76.70%         |
| Risky             | 19 | 1,205          | 4,730         | 3,525                 | 0.2951    | 292.46%         |
| Total Instruments | 19 | 14,719         | 14,471        | -248                  | 0.9866    | -1.68%          |
| Proportion Safe   | 19 | <b>0.94</b>    | <b>0.74</b>   | <b>-0.21</b>          | 0.0200 ** | -21.89%         |
| Results Fin Oper  | 19 | 81             | 180           | 99                    | 0.4578    | 121.50%         |

| PORTUGAL          | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|-------------------|----|----------------|---------------|-----------------------|------------|-----------------|
| Fixed Income      | 17 | 2,567          | 1,095         | -1,472                | 0.1718     | -57.33%         |
| Risky             | 17 | 276            | 574           | 298                   | 0.2536     | 108.09%         |
| Total Instruments | 17 | 2,843          | 1,684         | -1,158                | 0.3558     | -40.75%         |
| Proportion Safe   | 17 | <b>0.80</b>    | <b>0.50</b>   | <b>-0.30</b>          | 0.0077 *** | -37.46%         |
| Results Fin Oper  | 17 | 30             | 49            | 18                    | 0.6562     | 61.15%          |

| SPAIN             | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|-------------------|----|----------------|---------------|-----------------------|------------|-----------------|
| Fixed Income      | 52 | 1,655          | 1,847         | 191                   | 0.7108     | 11.56%          |
| Risky             | 52 | 176            | 675           | 499                   | 0.0299 **  | 282.62%         |
| Total Instruments | 52 | 1,832          | 2,526         | 695                   | 0.2631     | 37.94%          |
| Proportion Safe   | 52 | <b>0.83</b>    | <b>0.71</b>   | <b>-0.12</b>          | 0.0026 *** | -14.53%         |
| Results Fin Oper  | 52 | 19             | 177           | 157                   | 0.0091 *** | 818.43%         |

| UK                | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value  | Difference as % |
|-------------------|----|----------------|---------------|-----------------------|----------|-----------------|
| Fixed Income      | 34 | 6,937          | 10,993        | 4,057                 | 0.4773   | 58.48%          |
| Risky             | 34 | 331            | 495           | 163                   | 0.6856   | 49.28%          |
| Total Instruments | 34 | 7,268          | 13,133        | 5,865                 | 0.3987   | 80.70%          |
| Proportion Safe   | 34 | <b>0.86</b>    | <b>0.70</b>   | <b>-0.16</b>          | 0.0695 * | -18.78%         |
| Results Fin Oper  | 34 | 57             | 211           | 154                   | 0.2688   | 267.75%         |

Table 6. Indicators of interest presented according to both Local and IFRS accounting. Individual countries

We plot the *Proportion Safe Ratio* for the individual countries from above. According to the predictions from the analytical literature, as long as the switch to Fair Value accounting is done in a "good moment" of the economy, and taking into account the results at the EU15 level, we expect to see a reduction in the *Proportion Safe Ratio*. Indeed, the reduction in *Proportion Safe Ratio* appears for each country (supporting *Hypothesis 1a* at country level), and it is more pronounced in case of French origin countries: France, Italy and Portugal. Moreover, the most pronounced effect is in France.

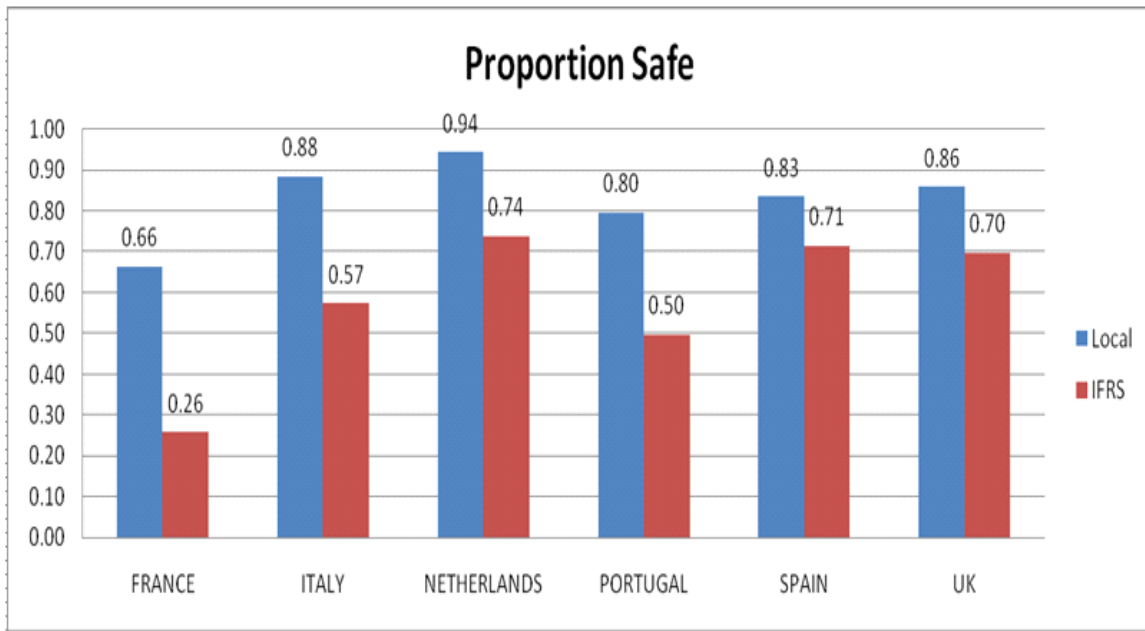


Figure 1. The *Proportion Safe Ratio* presented as both Local and IFRS accounting. Individual countries

We expect to see an increment of the income results. However, this increment is not equal for all countries. Similar to the *Proportion Safe Ratio* analysis, the French origin countries are different in terms of this increment: Portugal, Netherlands and Italy present the smallest increments, and the case of France is again special. For French banks, the Fair Value accounting application implies a reduction of the financial results, as opposed to the rest of the countries. The *Hypothesis 1b* is not sustained in the particular case of French banks.

The results are coherent with the fact that French banks were the most vocal opponents to the IFRS adoption.

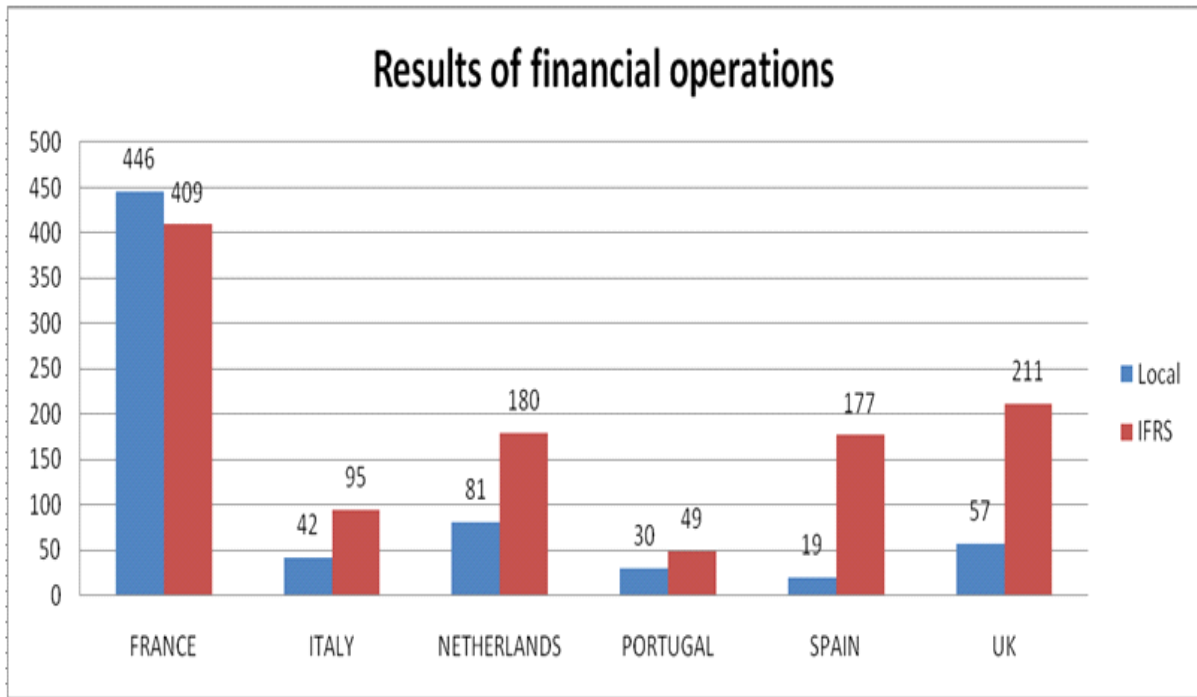


Figure 2. The *Results of Financial Operations* presented as both Local and IFRS accounting. Individual countries

We repeat the analysis by bank type (for the three most important categories in terms of data volume), instead of country:

| Commercial               | N   | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|--------------------------|-----|----------------|---------------|-----------------------|------------|-----------------|
| <b>Fixed Income</b>      | 128 | 11,529         | 8,094         | -3,435                | 0.2659     | -29.79%         |
| <b>Risky</b>             | 128 | 2,160          | 3,926         | 1,766                 | 0.1782     | 81.75%          |
| <b>Total Instruments</b> | 128 | 14,003         | 14,287        | 284                   | 0.9497     | 2.03%           |
| <b>Proportion Safe</b>   | 128 | <b>0.87</b>    | <b>0.62</b>   | <b>-0.25</b>          | 0.0000 *** | -29.07%         |
| <b>Results Fin Oper</b>  | 128 | 162            | 227           | 64                    | 0.4537     | 39.72%          |

| Savings                  | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|--------------------------|----|----------------|---------------|-----------------------|------------|-----------------|
| <b>Fixed Income</b>      | 49 | 1,762          | 1,770         | 8                     | 0.9871     | 0.47%           |
| <b>Risky</b>             | 49 | 185            | 882           | 698                   | 0.0090 *** | 378.00%         |
| <b>Total Instruments</b> | 49 | 1,946          | 2,652         | 706                   | 0.2704     | 36.28%          |
| <b>Proportion Safe</b>   | 49 | <b>0.86</b>    | <b>0.70</b>   | <b>-0.16</b>          | 0.0001 *** | -18.18%         |
| <b>Results Fin Oper</b>  | 49 | 17             | 178           | 160                   | 0.0122 **  | 936.00%         |

| Cooperative              | N  | Value as Local | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|--------------------------|----|----------------|---------------|-----------------------|------------|-----------------|
| <b>Fixed Income</b>      | 41 | 6,454          | 4,130         | -2,324                | 0.5018     | -36.01%         |
| <b>Risky</b>             | 41 | 1,766          | 1,115         | -651                  | 0.6097     | -36.84%         |
| <b>Total Instruments</b> | 41 | 8,220          | 4,684         | -3,537                | 0.4369     | -43.02%         |
| <b>Proportion Safe</b>   | 41 | <b>0.71</b>    | <b>0.40</b>   | <b>-0.31</b>          | 0.0002 *** | -43.85%         |
| <b>Results Fin Oper</b>  | 41 | 173            | 160           | -14                   | 0.9304     | -7.91%          |

Table 7. Indicators of interest presented according to both Local and IFRS accounting. Institution profiles analysis

The *Proportion Safe Ratio* is lower with fair value than with historic cost accounting, as we expected. However, the differences are not equal for the three categories analyzed. While the local accounting cannot differentiate between the portfolio composition of Commercial and Savings Banks (both of them with the ratio around 0.86), the IFRS accounting reveals that the Commercial Banks are actually investing riskier than Savings Banks, an expected result. It is important to mention that the Cooperative Banks present the most risky portfolios, viewed as both Local and IFRS, and the difference revealed by the IFRS presentation is the most relevant (a reduction of 43.85% versus 29.07% and 18.18% respectively for Commercial and Savings Banks).

The big gap between the Local and IFRS values of the *Proportion Safe Ratios* in case of Cooperative Banks induces a reduction of the financial results with IFRS application, a result opposed to the general EU15 sample conclusions and not supporting *Hypothesis 1b*. In case of Commercial and Savings Banks, they are advantaged by the IFRS adoption, and especially the last ones, having more conservative portfolios, supporting *Hypothesis 1b*, as the general sample predicts.

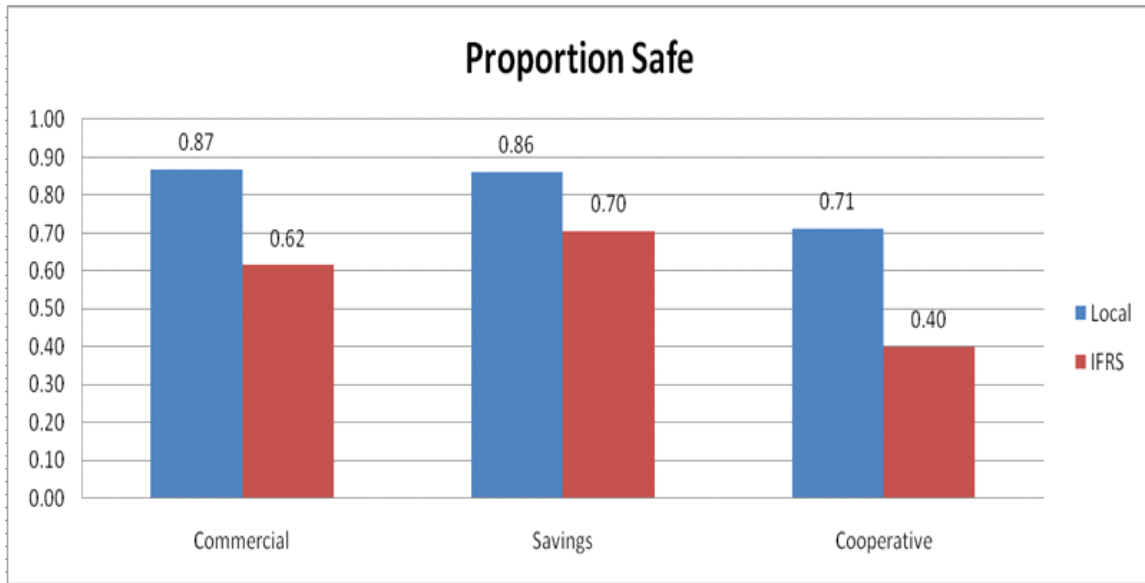


Figure 3. The *Proportion Safe Ratio* presented as both Local and IFRS accounting. Institution profiles analysis

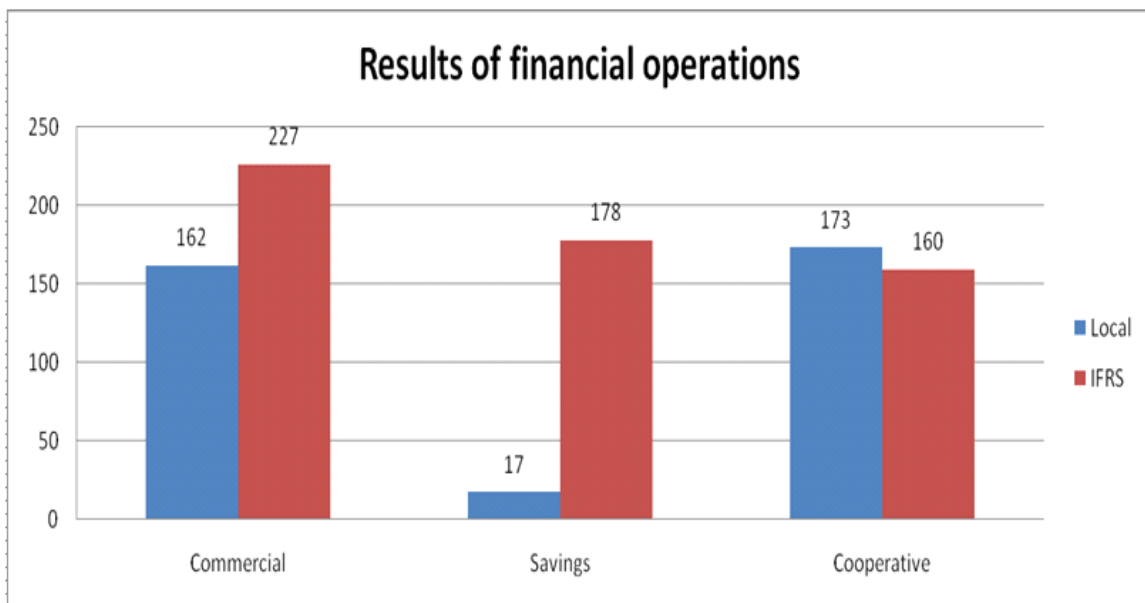


Figure 4. The *Results of Financial Operations* presented as both Local and IFRS accounting. Institution profiles analysis

Before moving to the next analysis, we repeat the EU15 analysis, but in a less restrictive scenario. We use the total amount of information, without asking for a constant sample between the two accounting regimes. The analysis is done with 307 banks as Local and 292 as IFRS and the results are similar with the initial analysis.

| EUROPE            | N Local | Value as Local | N IFRS | Value as IFRS | Difference IFRS-Local | p-value    | Difference as % |
|-------------------|---------|----------------|--------|---------------|-----------------------|------------|-----------------|
| Fixed Income      | 307     | 7,674          | 292    | 5,056         | -2,618                | 0.0926 *   | -34.11%         |
| Risky             | 307     | 1,432          | 292    | 2,292         | 859                   | 0.1626     | 60.01%          |
| Total Instruments | 307     | 9,237          | 292    | 8,265         | -971                  | 0.6570     | -10.52%         |
| Proportion Safe   | 307     | <b>0.79</b>    | 292    | <b>0.57</b>   | <b>-0.22</b>          | 0.0000 *** | -28.16%         |
| Results Fin Oper  | 307     | 115            | 292    | 176           | 61                    | 0.1940     | 52.99%          |

Table 8. Indicators of interest presented according to both Local and IFRS accounting. EU15 (sample not constant)

### 3.2 Complete horizon analysis

The present analysis prolongs the previous comparison of the two accounting reports at the same moment in time, by enlarging the analyzed horizon around the accounting switch moment.

We are aware that doing an analysis covering different moments in time, as a difference with the previous analysis, the composition of the trading portfolio and the market prices could change. This way we face the first two phenomena described in section 2.1.

However, the limitations of the portfolio composition and market prices variation can be addressed if we make the following assumption. With fair value reports, the accounting positions of risk-free, risky and income represents the actual market values of the items. We don't know whether the manager modifies the portfolio and/or the market values of the instruments are changed, but we are sure the *Proportion Safe Ratio* represents the actualized, market based splitting of the portfolio, and this division is controlled by the manager, hence should reflect his objective at the respective moment. Despite the fact we don't control the financial transactions and the market prices, we can infer, in case of fair value accounting, the risk appetite of the manager on a market based basis and we can observe the trends in time, for the rest of the fair value accounting reports. For the years with historic cost accounting reports, we cannot capture the exact risk position of the banks, however we can identify the significant transactions with financial instruments, in case they are produced.

We present (Figures 5 and 6) the evolution of *Proportion Safe Ratio* and the *Results of Financial Operations* for the consolidated reports of banks adopting IFRS in 2004, during the period 2002-2005 (i.e. 2 years before and 2 years after adoption). The sample is kept constant, for guaranteeing the comparability of the results.

We observe first how the previous section results remain valid with this sample, regarding the year with double reports. In the adoption year 2004, the *Proportion Safe Ratio* is lower with fair value accounting than with historic cost accounting and the financial results are better with fair value accounting, except the special case of France. French banks have riskier than average portfolios, viewed both as local and IFRS standards, and are negatively impacted by the IFRS adoption, in terms of financial results of the trading portfolios.

Then we observe that in the second year with IFRS adoption, the banks adjust their trading portfolios toward less risky ones, i.e. reduce their risk appetite. It can be remarked how the *Proportion Safe Ratio* increases in 2005 with respect to the IFRS 2004 value (both of them showing the market based risky appetite), for EU15 and for individual countries except Spain where it remains almost constant. It is the first support of *Hypothesis 2*: after IFRS adoption, the banks are adjusting their portfolio towards more conservative ones.

As we said before, we cannot make precise inferences for the years with local accounting reports because we don't know the actualized risk exposure of the trading portfolios, as long as it cannot be correctly inferred from the balance sheet values and the lack of knowledge of financial transactions and market prices. However, we can conclude that no particular trends with respect to the portfolio composition can be observed for the pre-adoption period.

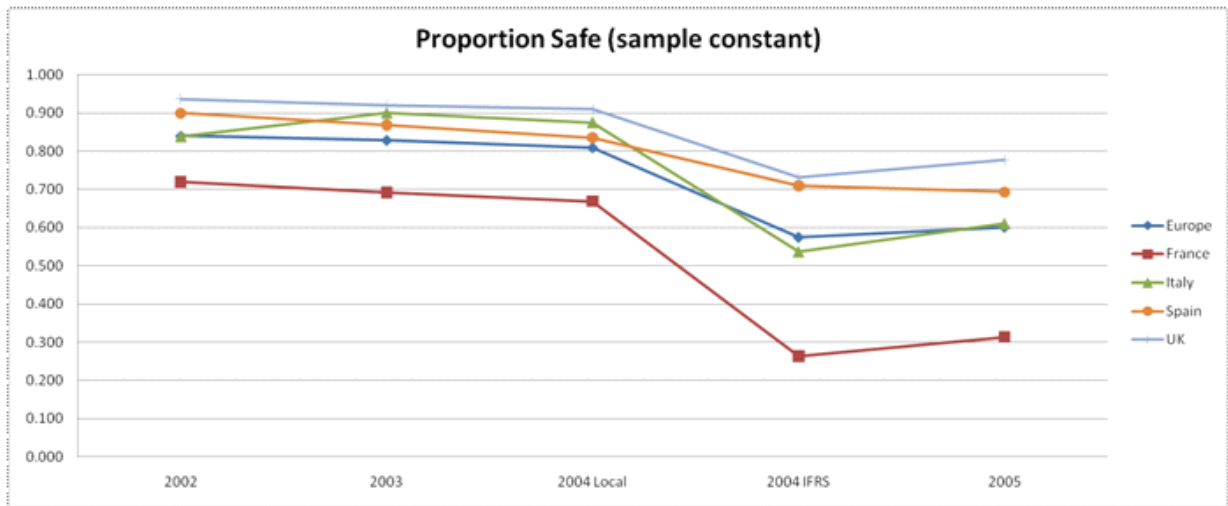


Figure 5. The *Proportion Safe Ratio* evolution in time. EU15

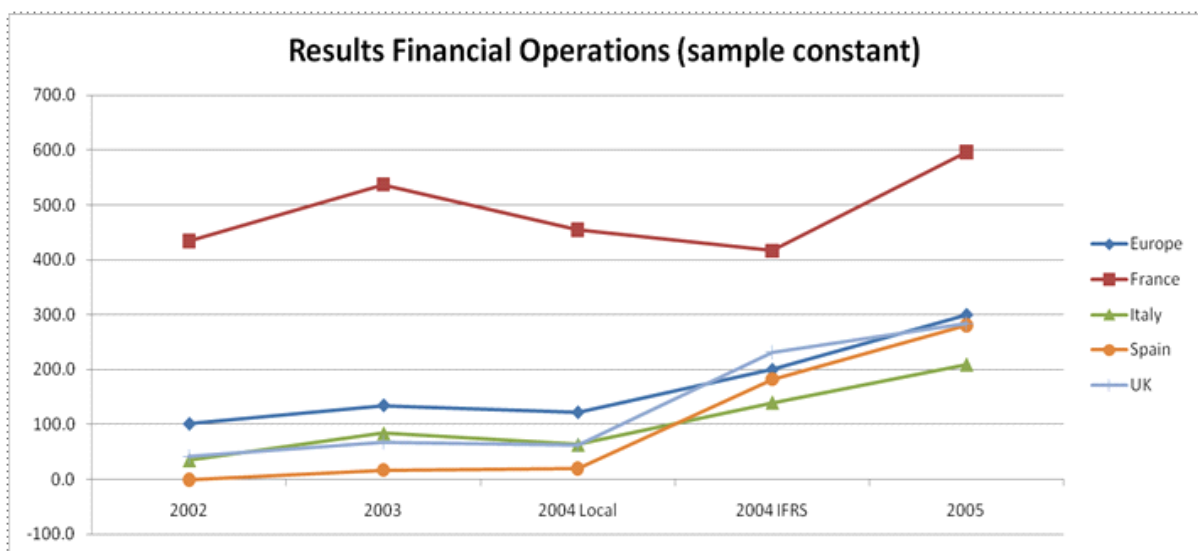


Figure 6. The *Results of Financial Operations* evolution in time. EU15

The detailed values of the graphs plotted above can be found in the next tables.

*Consolidated Reports. Sample constant for 2002-2005*

| <b>Proportion Safe Ratio</b> |              | <b>2002</b> | <b>2003</b> | <b>2004 Local</b> | <b>2004 IFRS</b> | <b>2005</b> |
|------------------------------|--------------|-------------|-------------|-------------------|------------------|-------------|
| <b>Europe</b>                | <b>N=250</b> | 0.840 ***   | 0.829 ***   | 0.809 ***         | 0.575 ***        | 0.601 ***   |
| <b>France</b>                | <b>N=47</b>  | 0.719 ***   | 0.692 ***   | 0.669 ***         | 0.263 ***        | 0.314 ***   |
| <b>Italy</b>                 | <b>N=32</b>  | 0.838 ***   | 0.900 ***   | 0.875 ***         | 0.536 ***        | 0.610 ***   |
| <b>Netherlands</b>           | <b>N=18</b>  | 0.947 ***   | 0.961 ***   | 0.940 ***         | 0.767 ***        | 0.664 ***   |
| <b>Portugal</b>              | <b>N=17</b>  | 0.865 ***   | 0.856 ***   | 0.795 ***         | 0.497 ***        | 0.600 ***   |
| <b>Spain</b>                 | <b>N=50</b>  | 0.899 ***   | 0.868 ***   | 0.835 ***         | 0.710 ***        | 0.693 ***   |
| <b>UK</b>                    | <b>N=31</b>  | 0.937 ***   | 0.919 ***   | 0.909 ***         | 0.732 ***        | 0.776 ***   |

| Results Fin Oper |       | 2002      | 2003      | 2004 Local | 2004 IFRS | 2005      |
|------------------|-------|-----------|-----------|------------|-----------|-----------|
| Europe           | N=250 | 101.0 *** | 134.7 *** | 122.1 ***  | 199.8 *** | 300.2 *** |
| France           | N=47  | 434.4 *** | 537.4 *** | 455.0 ***  | 416.5 **  | 596.2 *** |
| Italy            | N=32  | 34.6      | 83.7 *    | 63.2 *     | 139.9 *   | 209.4 **  |
| Netherlands      | N=18  | 28.2      | 43.9      | 84.6 **    | 189.8     | 418.5     |
| Portugal         | N=17  | 22.5 **   | 27.8 **   | 30.2 *     | 48.6      | 155.7 *   |
| Spain            | N=50  | -0.8      | 16.8 ***  | 19.6 ***   | 182.6 *** | 280.6 *** |
| UK               | N=31  | 41.3 **   | 67.2 **   | 62.7 **    | 231.2     | 283.9 *   |

Table 9. The *Proportion Safe Ratio* and *Results of Financial Operations* evolution in time. EU15

A similar analysis of the portfolio allocations trend after the IFRS adoption can be observed in the next graphs where the analyzed horizon is the entire period 1999-2007 and the sample is not restricted to the common entities, but uses all the information available. We present for simplicity only the aggregate EU15 analysis, but the individual countries trends are coherent with the above graph in this subsection. We plot in Figures 7 and 8 the banks that adopted IFRS in 2004 and in Figures 9 and 10 those adopting in 2005. The analysis is done for the consolidated reports (for them the adoption is mandatory, in case of the listed entities). Similarly to the 2002-2004 analysis, we observe that banks are slowly adjusting their trading portfolios, year by year, after IFRS adoption, supporting again *Hypothesis 2*. The financial results are improving after adoption year by year.

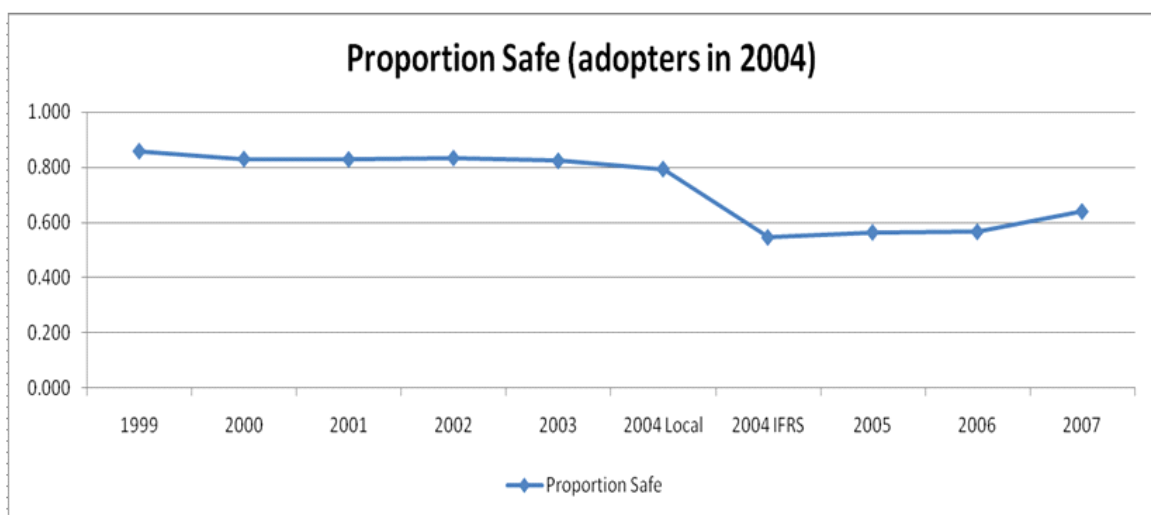


Figure 7. The *Proportion Safe Ratio* evolution in time. Adopters in 2004. Full horizon. EU15

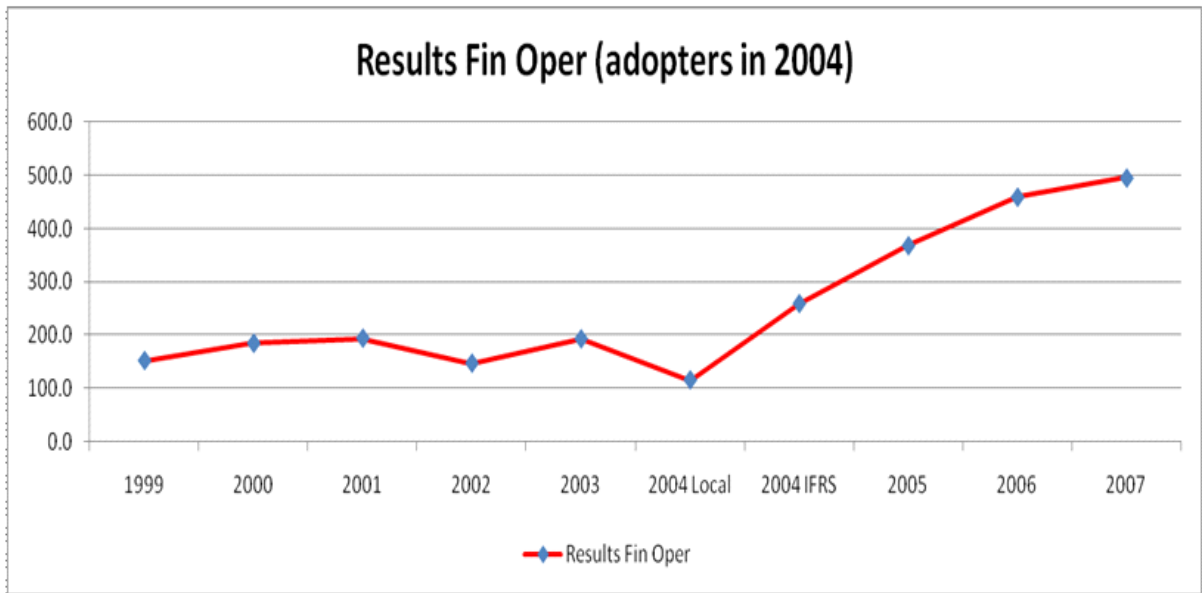


Figure 8. The *Results of Financial Operations* evolution in time. Adopters in 2004. Full horizon. EU15

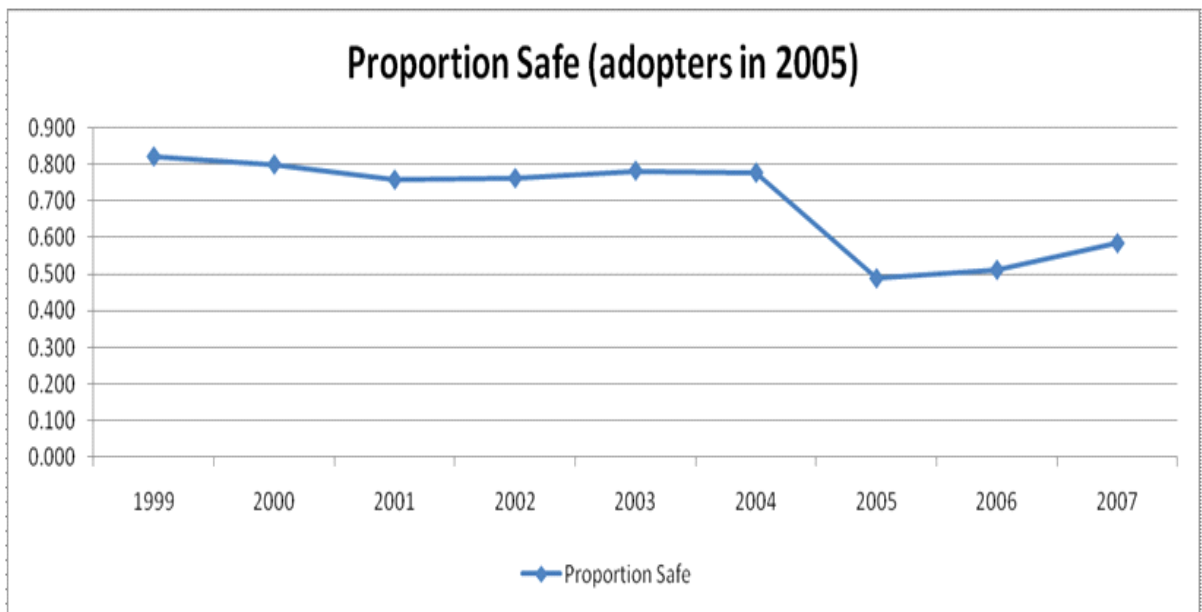


Figure 9. The *Proportion Safe Ratio* evolution in time. Adopters in 2005. Full horizon. EU15

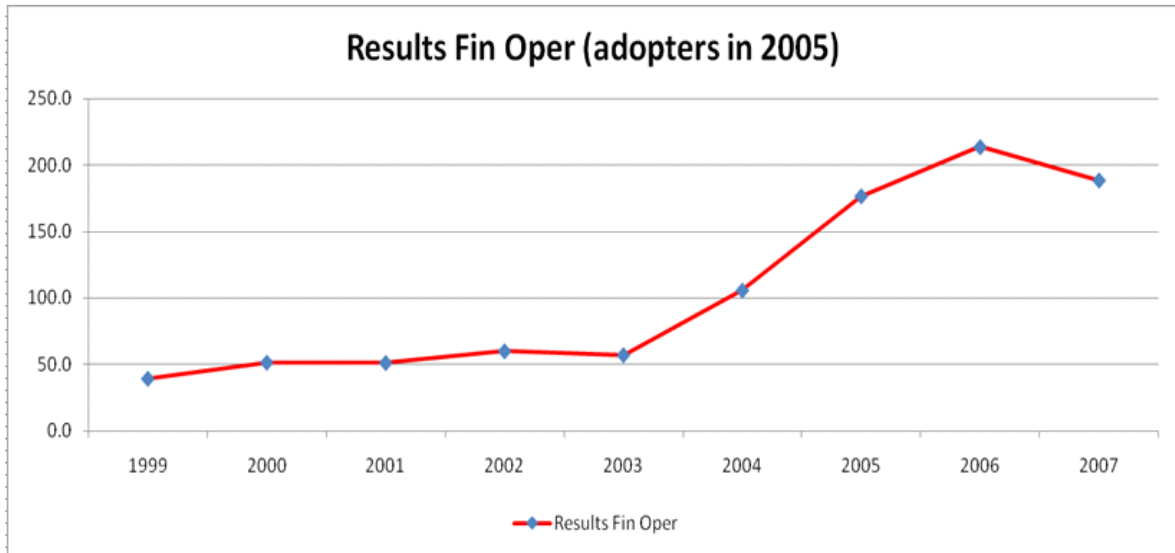


Figure 10. The *Results of Financial Operations* evolution in time. Adopters in 2005. Full horizon. EU15

We provide also the numerical values and the number of entities used in each of the years of the analysis.

*Consolidated adopters in 2004*

| EUROPE                |           |           |           |           |           |            |           |           |           |           |
|-----------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|
| Proportion Safe Ratio | 1999      | 2000      | 2001      | 2002      | 2003      | 2004 Local | 2004 IFRS | 2005      | 2006      | 2007      |
| N                     | 279       | 298       | 311       | 328       | 337       | 307        | 374       | 399       | 374       | 242       |
| Proportion Safe       | 0.859 *** | 0.830 *** | 0.829 *** | 0.834 *** | 0.824 *** | 0.794 ***  | 0.546 *** | 0.564 *** | 0.566 *** | 0.640 *** |

| EUROPE           |           |           |           |           |           |            |           |           |           |           |
|------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|
| Results Fin Oper | 1999      | 2000      | 2001      | 2002      | 2003      | 2004 Local | 2004 IFRS | 2005      | 2006      | 2007      |
| N                | 279       | 298       | 311       | 328       | 337       | 307        | 374       | 399       | 374       | 242       |
| Results Fin Oper | 151.2 *** | 183.8 *** | 193.4 *** | 146.2 *** | 192.1 *** | 114.7 ***  | 258.7 *** | 367.9 *** | 459.5 *** | 495.7 *** |

*Consolidated adopters in 2005*

| EUROPE                |           |           |           |           |           |           |           |           |           |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Proportion Safe Ratio | 1999      | 2000      | 2001      | 2002      | 2003      | 2004      | 2005      | 2006      | 2007      |
| N                     | 88        | 95        | 103       | 106       | 108       | 108       | 125       | 119       | 61        |
| Proportion Safe       | 0.820 *** | 0.798 *** | 0.757 *** | 0.761 *** | 0.781 *** | 0.776 *** | 0.490 *** | 0.513 *** | 0.585 *** |

| EUROPE           |          |          |         |         |          |          |           |           |          |
|------------------|----------|----------|---------|---------|----------|----------|-----------|-----------|----------|
| Results Fin Oper | 1999     | 2000     | 2001    | 2002    | 2003     | 2004     | 2005      | 2006      | 2007     |
| N                | 88       | 95       | 103     | 106     | 108      | 108      | 125       | 119       | 61       |
| Results Fin Oper | 39.4 *** | 51.6 *** | 51.3 ** | 60.1 ** | 57.2 *** | 105.9 ** | 176.8 *** | 213.8 *** | 188.8 ** |

Table 10. The *Proportion Safe Ratio* and the *Results of Financial Operations* evolution in time. Full horizon. Consolidated reports. EU15

To make a robustness check of the entire horizon analysis, we compute also the similar unconsolidated values, for adopters in 2004 and 2005 respectively. From Table 11 we observe that the financial results are always improving after IFRS adoption. The trend of risk appetite reduction is followed for the adopters in 2004, for the period 2004-2006, but it is not observed for the adopters in 2005. We interpret this last result in the following way. The unconsolidated reports presented as IFRS for the first time in 2005 correspond to banks that adopt IFRS in a mandatory manner, in the last moment, because they are forced to do it (otherwise would have anticipate the change). Switching to IFRS in a mandatory instead of a voluntary manner suggest that these banks were not sufficiently prepared to the fair value accounting regime; for various reasons they could not rebalance very easy the portfolios towards more conservative portfolios, as the fair value accounting adoption induces. Consequently, the portfolio adjustment trend is not observed for the unconsolidated reports of the banks adopting IFRS in 2005.

*Unconsolidated adopters in 2004*

| EUROPE                |           |           |           |           |           |           |           |           |           |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Proportion Safe Ratio | 1999      | 2000      | 2001      | 2002      | 2003      | 2004      | 2005      | 2006      | 2007      |
| N                     | 125       | 131       | 140       | 154       | 149       | 206       | 226       | 203       | 68        |
| Proportion Safe       | 0.866 *** | 0.847 *** | 0.875 *** | 0.899 *** | 0.880 *** | 0.462 *** | 0.513 *** | 0.515 *** | 0.498 *** |

| EUROPE           |          |          |          |         |          |          |          |          |          |
|------------------|----------|----------|----------|---------|----------|----------|----------|----------|----------|
| Results Fin Oper | 1999     | 2000     | 2001     | 2002    | 2003     | 2004     | 2005     | 2006     | 2007     |
| N                | 125      | 131      | 140      | 154     | 149      | 206      | 226      | 203      | 68       |
| Results Fin Oper | 11.8 *** | 12.0 *** | 13.3 *** | 4.7 *** | 12.3 *** | 12.7 *** | 23.7 *** | 25.7 *** | 29.6 *** |

*Unconsolidated adopters in 2005*

| EUROPE                |           |           |           |           |           |           |           |           |           |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Proportion Safe Ratio | 1999      | 2000      | 2001      | 2002      | 2003      | 2004      | 2005      | 2006      | 2007      |
| N                     | 556       | 575       | 615       | 638       | 644       | 647       | 769       | 759       | 101       |
| Proportion Safe       | 0.906 *** | 0.920 *** | 0.875 *** | 0.907 *** | 0.912 *** | 0.921 *** | 0.640 *** | 0.614 *** | 0.499 *** |

| EUROPE           |         |         |         |        |         |         |         |          |          |
|------------------|---------|---------|---------|--------|---------|---------|---------|----------|----------|
| Results Fin Oper | 1999    | 2000    | 2001    | 2002   | 2003    | 2004    | 2005    | 2006     | 2007     |
| N                | 556     | 575     | 615     | 638    | 644     | 647     | 769     | 759      | 101      |
| Results Fin Oper | 3.0 *** | 3.5 *** | 2.0 *** | 1.7 ** | 3.3 *** | 3.1 *** | 8.8 *** | 10.9 *** | 15.1 *** |

Table 11. The *Proportion Safe Ratio* and the *Results of Financial Operations* evolution in time. Full horizon. Unconsolidated reports. EU15

To conclude our complete horizon analysis, we can infer that after IFRS adoption, banks are slowly adjusting their trading portfolios, year by year, supporting *Hypothesis 2*. Also, the financial results are improving after adoption year by year, even if the portfolios are less risky.

The explanation for the improvements of the financial results after IFRS adoption is the following. Due to fair value accounting, there is no need to carry similar risky portfolios to the historic cost era in order to recognize profits; the new accounting system translates all the upper moves of the assets, corresponding to the good period of the economy during 2004-2007, into the financial accounts. The fact that the accounting benefits are increasing very quickly in the IFRS period 2004-2007 is also important for another aspect: there can be alternatively argued that the previously observed reduction in the exposure to risky instruments during the IFRS period happens because the risky assets are reducing their market value (i.e. "bad" financial assets), not because the manager renounces to part of them. In other words, it can be argued that the reduction of the *Proportion Safe Ratio* is not voluntarily realized by banks when adopting fair value accounting, but it is a consequence of the market value reduction during the period 2004-2007. This argument is not feasible as long as the financial results are increasing very much during this period: this would not be compatible with the existence of the "bad assets" in their portfolios.

We make a final comment on this subsection. The portfolio adjustments after IFRS adoption are in line with the predictions from the theoretical literature, however their magnitude is not very pronounced. We interpret the slow adaptation of the portfolio to at least three factors. The first one is the difficulty to liquidate big amounts of risky assets without destroying their price (to avoid fire-sale selling). Second, the trading portfolio represents only a part of the banks' assets; hence the manager is not fully concerned with the trading portfolio results, but possibly with the traditional banking part. The last one is that the managers' risk aversion is not sufficiently high and/or the career concern short-termism is more important than the theoretical models assumptions, hence the manager will prefer under the fair value accounting regulation a riskier than optimal portfolio because it advantages him in the short run when the economic situation is good. This last factor can be tested if the analyzed horizon would contain also "bad time" years, and it represents the object of the next sub-section.

### 3.2.1 Spanish case

Interesting conclusions can be drawn if our analyzed horizon would cover the recent financial crisis period. Unfortunately, our database constructed from the Bankscope items does not contain data for this period, due to the provider time delay for updating the data and the time needed to construct the individual items needed for our research. However, for the particular case of Spain we obtain the necessary information covering the period 2005-2009 (summer). The data are provided by the Spanish Banking Association (AEB). We analyze the behavior of 20 Spanish commercial banks, from their quarterly consolidated reports.

The results on portfolio adjustments (Figure 11) are coherent with the previous findings. The banks are tending year by year to more conservative portfolios during the IFRS period.<sup>5</sup>

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<sup>5</sup> The *Proportion Safe Ratio* increases more during the financial crisis. We can conclude that the portfolio adjustments are more pronounced during the financial crisis, despite the fact that the financial results are reducing drastically for the same period; the *Risky Assets* values were not reducing significantly hence the reduction of *Proportion Safe Ratio* was voluntarily achieved.

The findings on financial results of the trading portfolios (Figure 12) deserve special attention. The accounting profits initially follow an upper trend and become suddenly very bad during the financial crisis. This behavior is coherent with the predictions from the theoretical literature and with our interpretation of the slow portfolio adjustments after IFRS adoption. We remarked that banks change their portfolios in a less radical proportion than our theoretical models predict and we found some explanations. The negative results during the financial crisis represent a new support of the idea that the trading portfolios are insufficiently adapted to fair value accounting (i.e. not sufficiently conservative). If they would have been even more conservative than they were at the beginning of the crisis, the financial results would have not been so bad. The improper adaptation to the fair value accounting by not being sufficiently conservative advantaged the banks during the period 2005-2007, before the financial crisis and punishes them during the crisis.

We make a comment regarding regulatory implications of the fair value accounting regime. In a symmetric way the fair value accounting was preferable in good time, it converts into the worse accounting regime during the financial crisis because it perfectly mirrors the market movements. The positive and negative movements of the financial portfolio are amplified in the financial reports by the proportion of the portfolio invested in risky instruments, the most variable instruments.

Case of Spain,  $N=20$  different entities, sample constant in time.

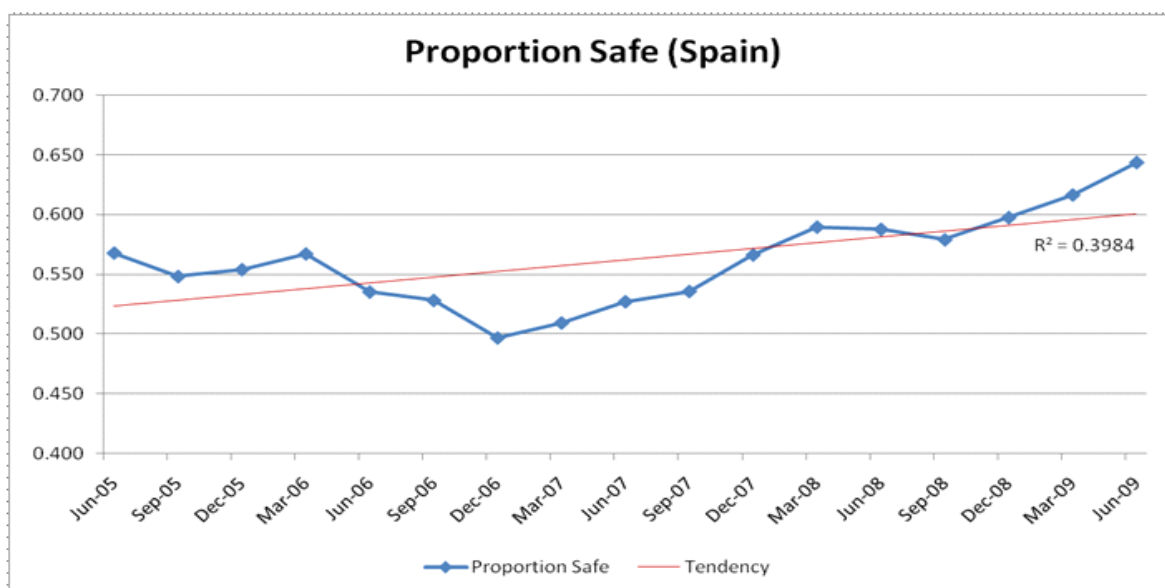


Figure 11. The *Proportion Safe Ratio* evolution in time. Spanish case

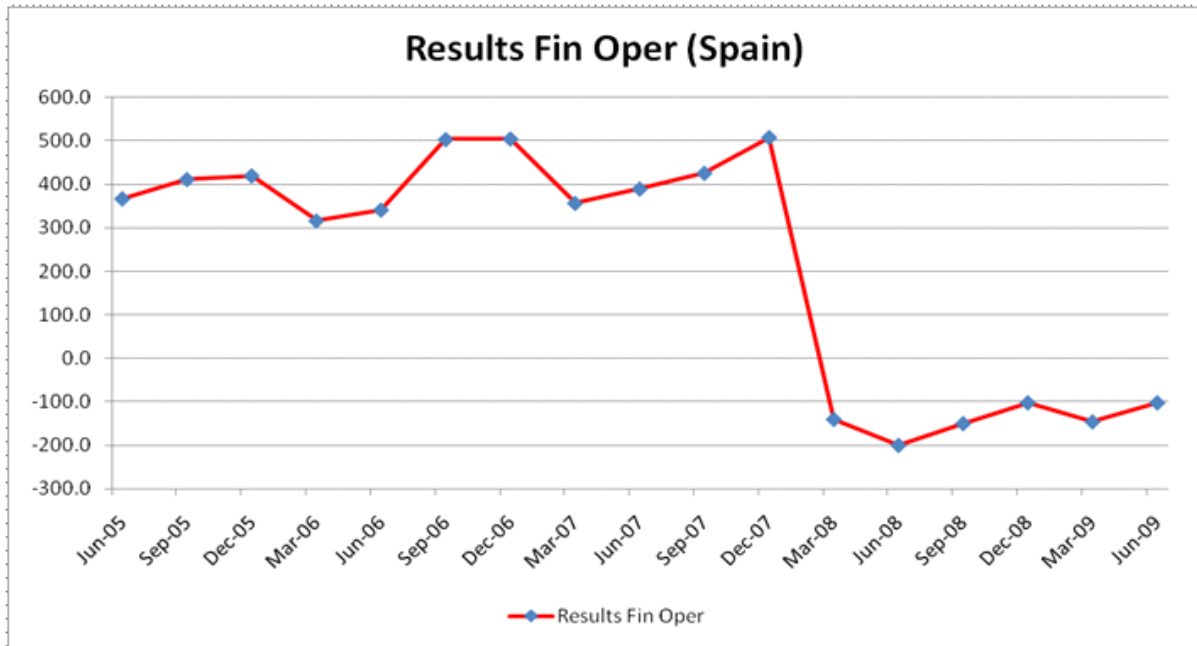


Figure 12. The *Results of Financial Operations* evolution in time. Spanish case

| SPAIN               |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|---------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| ProportionSafeRatio | Jun-05   | Sep-05   | Dec-05   | Mar-06   | Jun-06   | Sep-06   | Dec-06   | Mar-07   | Jun-07   | Sep-07   | Dec-07   | Mar-08   | Jun-08   | Sep-08   | Dec-08   | Mar-09   | Jun-09   |
| N                   | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       | 20       |
| ProportionSafe      | 0.568*** | 0.548*** | 0.554*** | 0.567*** | 0.535*** | 0.528*** | 0.497*** | 0.509*** | 0.527*** | 0.536*** | 0.566*** | 0.590*** | 0.588*** | 0.579*** | 0.598*** | 0.617*** | 0.644*** |

| SPAIN            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Results Fin Oper | Jun-05 | Sep-05 | Dec-05 | Mar-06 | Jun-06 | Sep-06 | Dec-06 | Mar-07 | Jun-07 | Sep-07 | Dec-07 | Mar-08 | Jun-08 | Sep-08 | Dec-08 | Mar-09 | Jun-09 |
| N                | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     | 20     |
| Results Fin Oper | 367.2  | 411.6  | 419.8* | 316.4  | 341.6  | 503.4  | 504.8  | 356.8  | 389.9  | 425.9  | 507.9  | -139.5 | -199.1 | -149.2 | -101.4 | -145.1 | -101.5 |

Table 12. The *Proportion Safe Ratio* and the *Results of Financial Operations* evolution in time. Spanish case

### 3.3 Difference-in difference analysis

The third univariate analysis is of the difference-in-difference type, "a simple way to account for unobserved differences between treatment and control firms and to adjust

observed changes for the treatment firms by concurrent changes that are also experienced by the control firms", as Daske et al. (2008) calls it.

The difference-in-difference analyses are very simple techniques, where there are compared the means of the subpopulations under analysis, before and after an event arises. The treatment and the benchmark groups used in the following comparisons are chosen to be as similar as possible between them, and the bank samples are held constant in time in order to correctly test the means (i.e. in order to eliminate the impact of sample composition).

The first approach uses as treatment the entities that adopt IFRS in the second year of the analysis and as benchmark the entities that remain as local in both years. The objective of this analysis is to detect whether there are changes for the banks that adopt IFRS as compared with those that remain local.

The second analysis uses as treatment the entities that adopt IFRS in the second year and as benchmark those entities that already report as IFRS in the first year. With this analysis we want to detect the changes after IFRS adoption.

However, in our case we have to be cautious because the three phenomena discussed in section 2.1 meet here. There are comparisons of portfolios realities at different moments in time, hence both portfolio composition and market prices could change, and moreover, for one of the treatment or benchmark sample, the accounting system in force also changes. Despite of these complications, correct inferences can be realized from the comparison of some indicators.

The results of the analyses are presented in Tables 13 (analysis 1) and 14 (analysis 2). Similar to the previous analyses, the tables report mean values of the variables of interest and the number of observations. The stars \*, \*\* and \*\*\* indicate statistical significance of differences in means at the 10%, 5% and 1% levels, respectively, based on two-sided *t*-tests. We assess the statistical significance of the difference-in-differences values by comparing means of yearly changes across treatment and benchmark samples.

The first analysis is done under 3 scenarios and the results are similar (Table 13, Panels A-C): the first scenario analyzes consolidated reports where the treatment sample adopts IFRS in 2005, the second is similar but the adoption is in 2004 and the third one is for unconsolidated reports with treatment sample adopting in 2005.

We observe in the three cases how the *Proportion Safe Ratio* decreases, as expected, for the banks that adopt IFRS. In case of scenario 1 (Table 13, Panel A), it decreases in a significant manner from 0.780 to 0.493, a reduction of 36.74% versus the reduction of only 2.84% for the banks that remain local in both years. Moreover, in the pre-adoption year the banks that prepare to adopt IFRS are safer (0.780 versus 0.729 in case of the banks that will remain local). The first conclusion of this analysis is that IFRS application reduces the *Proportion Safe Ratio*, as it can be computed from the balance sheet. This represents an additional support for *Hypothesis 1a*. Despite the fact we compare two moments in time, we can infer that the market based risk profile (the complement of the *Proportion Safe Ratio*), revealed by the IFRS application, is significantly higher than that presented by the old historic cost regime. The *Proportion Safe Ratio* reduction is caused by the new accounting application. The possibility that the portfolio is intentionally riskier in the first year after adoption is discarded, taking into account the results of the previous univariate analyses in this section. The second conclusion is inferred by comparing the pre-adoption year ratios. Even if there are historic cost ratios and they are not very precise about the actualized market positions of the portfolios, we can infer how the banks that are preparing for switching to IFRS (the treatment sample) are more conservative than the non-adopters, an additional support for *Hypothesis 2*: the IFRS application anticipation forces the imminent adopters to adjust their portfolios towards more conservative ones; the adjustment happens before IFRS adoption, and it was clearly observed after IFRS adoption, what *Hypothesis 2* predicts.

The financial results increase in a substantial manner for the banks that adopt IFRS comparing with the rest of the banks. It represents also an additional support for *Hypothesis 1b*, that the IFRS application around the year 2005 is in general beneficial for the EU15 banks.

These results remain the same for the other two scenarios, when the adoption year for the treatment sample is 2004 and when repeating the first scenario for unconsolidated reports, sustaining our conclusions.

For the second analysis the treatment sample is represented by the banks that adopt IFRS in 2005 and the benchmark by the banks that already adopted IFRS in 2004. The analysis is done under two different scenarios (Table 14, Panels A-B), for consolidated and for the unconsolidated reports and provides us interesting results.

Looking at the *Proportion Safe Ratio*, we observe from the benchmark samples of both panels that it increases after IFRS adoption, supporting *Hypothesis 2*. It is a comparison of the market based riskiness positions of the portfolios. The same ratio, for the treatment samples, decreases, as we saw in the previous difference-in-difference analysis, due to the accounting regime switch. We look now with special attention at two ratios where the comparability is perfect because they are expressed in terms of fair value accounting, even if there are different years. From the consolidated reports analysis, we find that the banks that adopt IFRS earlier (in 2004) start the IFRS era with more conservative portfolios than those adopting IFRS in 2005 in a mandatory manner (the *Proportion Safe Ratio* of 0.546 instead of 0.493, respectively). The possible motivation is the same as we signalled before: the banks that adopt IFRS in the last moment just because it is mandatory are the least prepared and they can have difficulties in adjusting their portfolios towards more conservative one. However, this result is not sustained by the unconsolidated reports analysis.

An interesting conclusion can be drawn from the results of the financial operations: they increase less for the benchmark, i.e. after adoption, than in the first year of switching. It supports again *Hypothesis 1b*, on the positive impact of IFRS adoption moment.

### **Difference-in difference: Analysis 1**

**Scenario 1.1.** Analysis for the period 2004-2005. Consolidated Reports

*Treatment:* are Listed and Unlisted that adopt exactly in 2005

*Benchmark:* Listed and Unlisted; Unlisted that never adopt + Listed and Unlisted that adopt in a year > 2005

| <b>Proportion Safe Ratio</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>             | 105      | 0.780       | 0.493       | -0.287 ***       | -36.74%           |
| <b>Benchmark</b>             | 265      | 0.729       | 0.709       | -0.021           | -2.84%            |
| <b>Difference</b>            |          | 0.051       | -0.215 ***  | -0.266 ***       |                   |

| <b>Results of Financ. Oper.</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|---------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>                | 105      | 108.9       | 204.2       | 95.3             | 87.55%            |
| <b>Benchmark</b>                | 265      | 32.8        | 33.4        | 0.7              | 2.04%             |
| <b>Difference</b>               |          | 76.1 *      | 170.8 ***   | 94.7 **          |                   |

Table 13 (panel A). Difference-in-differences analysis of the "portfolio effects" around the IFRS Mandate. Adopters in 2005 vs non-adopters. Analysis for the period 2004-2005. Consolidated Reports

*Scenario 1.2.* Analysis for the period 2003-2004. Consolidated Reports

*Treatment:* are Listed and Unlisted that adopt exactly in 2004

*Benchmark:* Listed and Unlisted; Unlisted that never adopt + Listed and Unlisted that adopt in a year > 2004

| <b>Proportion Safe Ratio</b> | <b>N</b> | <b>2003</b> | <b>2004</b> | <b>2004-2003</b> | <b>diff. as %</b> |
|------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>             | 316      | 0.837       | 0.570       | -0.267 ***       | -31.92%           |
| <b>Benchmark</b>             | 362      | 0.750       | 0.748       | -0.002           | -0.27%            |
| <b>Difference</b>            |          | 0.087 ***   | -0.178 ***  | -0.265 ***       |                   |

| <b>Results of Financ. Oper.</b> | <b>N</b> | <b>2003</b> | <b>2004</b> | <b>2004-2003</b> | <b>diff. as %</b> |
|---------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>                | 316      | 197.1       | 299.2       | 102.0 *          | 51.74%            |
| <b>Benchmark</b>                | 362      | 42.4        | 55.1        | 12.8             | 30.11%            |
| <b>Difference</b>               |          | 154.8 ***   | 244.0 ***   | 89.2 ***         |                   |

Table 13 (panel B). Difference-in-differences analysis of the "portfolio effects" around the IFRS Mandate. Adopters in 2004 vs non-adopters. Analysis for the period 2003-2004. Consolidated Reports

**Scenario 1.3.** Analysis for the period 2004-2005. Unconsolidated Reports

*Treatment:* are Listed + Unlisted that adopt exactly in 2005

*Benchmark:* Listed and Unlisted; Unlisted that never adopt + Listed and Unlisted that adopt in a year > 2005

| <b>Proportion Safe Ratio</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>             | 631      | 0.923       | 0.669       | -0.254 ***       | -27.56%           |
| <b>Benchmark</b>             | 2430     | 0.745       | 0.727       | -0.018 **        | -2.46%            |
| <b>Difference</b>            |          | 0.178 ***   | -0.058 ***  | -0.236 ***       |                   |

| <b>Results of Financ. Oper.</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|---------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>                | 631      | 3.2         | 9.8         | 6.6 ***          | 203.70%           |
| <b>Benchmark</b>                | 2430     | 3.7         | 4.0         | 0.3              | 7.81%             |
| <b>Difference</b>               |          | -0.5        | 5.8 ***     | 6.3 ***          |                   |

Table 13 (panel C). Difference-in-differences analysis of the "portfolio effects" around the IFRS Mandate. Adopters in 2005 vs non-adopters. Analysis for the period 2004-2005. Unconsolidated Reports

### Difference-in difference: Analysis 2

**Scenario 2.1.** Analysis for the period 2004-2005. Consolidated Reports

*Treatment:* are Listed + Unlisted that adopt exactly in 2005

*Benchmark:* are Listed + Unlisted that adopt exactly in 2004

| <b>Proportion Safe Ratio</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>             | 105      | 0.780       | 0.493       | -0.287 ***       | -36.74%           |
| <b>Benchmark</b>             | 374      | 0.546       | 0.573       | 0.028            | 5.05%             |
| <b>Difference</b>            |          | 0.234 ***   | -0.080 *    | -0.314 ***       |                   |

| <b>Results of Financ. Oper.</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|---------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>                | 105      | 108.9       | 204.2       | 95.3             | 87.55%            |
| <b>Benchmark</b>                | 374      | 258.7       | 378.1       | 119.4 *          | 46.15%            |
| <b>Difference</b>               |          | -149.8 *    | -173.9 *    | -24.1            |                   |

Table 14 (panel A). Difference-in-differences analysis of the "portfolio effects" around the IFRS Mandate. Adopters in 2005 vs adopters in 2004. Analysis for the period 2004-2005. Consolidated Reports

**Scenario 2.2.** Analysis for the period 2004-2005. Unconsolidated Reports

*Treatment:* are Listed + Unlisted that adopt exactly in 2005

*Benchmark:* are Listed + Unlisted that adopt exactly in 2004

| <b>Proportion Safe Ratio</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>             | 631      | 0.923       | 0.669       | -0.254 ***       | -27.56%           |
| <b>Benchmark</b>             | 204      | 0.466       | 0.531       | 0.064            | 13.84%            |
| <b>Difference</b>            |          | 0.457 ***   | 0.138 ***   | -0.319 ***       |                   |

| <b>Results of Financ. Oper.</b> | <b>N</b> | <b>2004</b> | <b>2005</b> | <b>2005-2004</b> | <b>diff. as %</b> |
|---------------------------------|----------|-------------|-------------|------------------|-------------------|
| <b>Treatment</b>                | 631      | 3.2         | 9.8         | 6.6 ***          | 203.70%           |
| <b>Benchmark</b>                | 204      | 12.8        | 24.8        | 12.0 **          | 93.71%            |
| <b>Difference</b>               |          | -9.6 ***    | -15.1 ***   | -5.5 **          |                   |

Table 14 (panel B). Difference-in-differences analysis of the "portfolio effects" around the IFRS Mandate. Adopters in 2005 vs adopters in 2004. Analysis for the period 2004-2005. Unconsolidated Reports

#### 4. Multivariate analysis (regressions)

The present section discusses the multivariate tests of our hypotheses. The first tests are focused on *Hypothesis 1*: we want to check whether by applying fair value accounting, the *Proportion Safe Ratio* diminishes and the *Results of Financial Operations* increase.

The second test intends to reveal the trends after IFRS adoption with the two mentioned indicators, in other words whether *Hypothesis 2* is supported.

Finally, the third series of tests are analyzing the heterogeneity of the impacts for the countries composing the EU15.

##### 4.1 The IFRS adoption impact (*Hypothesis 1*)

We start our discussion of the first series of tests for the IFRS impact on balance sheets. The basic model to be tested is similar to Daske et al. (2008):

$$PortfolioEffects = \alpha_0 + \alpha_1 * EarlyAdopter + \alpha_2 * LateAdopter + \alpha_3 * EarlyAdopter * IFRS + \alpha_4 * LateAdopter * IFRS + \alpha_5 * Leverage + \alpha_6 * Size + \alpha_7 * Listed$$

The variable *Portfolio Effects* stands for *Proportion Safe Ratio* and *Results of Financial Operations*. These portfolio effects are tested for the population of consolidated and unconsolidated reports, respectively, under different scenarios. We mark every IFRS adopter bank inside the analyzed populations as *Early Adopter* or *Late Adopter*, depending on the adoption year. *Early Adopter* marks the banks that adopt IFRS between 2002 and 2004.<sup>6</sup>

*Late Adopter* marks the banks that adopt in 2005. The variables *Early Adopter* and *Late Adopter* are equal to 1 for all years for the banks that adopted in a voluntary manner, before mandated deadline and in the last year 2005, respectively; they are constant inside of a company. The variable *IFRS* marks the firm-years with IFRS reports. It is equal to 1 for IFRS years and 0 otherwise. The interaction terms *Early Adopter\*IFRS* and *Late Adopter\*IFRS* mark the impacts of IFRS adoption for the two categories of adopters.

The rest of the variables are control ones. *Leverage* = total liabilities/total assets, *Size* = log of total assets and *Listed* = binary variable marking the listed companies, 1 for listed companies and 0 otherwise.

We run the previous model regression for the following three scenarios (models). Model 1, or the base model, is the analysis for the entire population of consolidated reports, and country fixed effects are imposed. The second model is a sensitivity analysis, repeating the base model for institution profiles fixed effects instead of country fixed effects. The third model is the second alternative to the base model and it repeats the first model (the base model) but for the population of unconsolidated reports instead of consolidated ones. The portfolio effects for adopters are evaluated relative to banks that have not yet switched to IFRS.

Tables 15 and 16 report the regressions results. We tabulate ordinary least squares coefficient estimates and, in parentheses, *t*-statistics based on robust standard errors that are clustered by firm. The coefficients for fixed effects are not shown, neither the constant terms.

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<sup>6</sup> We are not considering in this category the banks adopting IFRS before 2002 because the national announcements that the countries will adopt IFRS as a mandatory standard were done in 2002 (see Daske et al (2008), table 6). Moreover the IFRS version for periods before 2002 was not contemplating the fair value adoption for the financial instruments.

|                                     | <i>Model 1</i><br>Main | <i>Model 2</i><br>Institution type<br>fixed effects | <i>Model 3</i><br>Unconsolidated |
|-------------------------------------|------------------------|---|----------------------------------|
| <b><u>Proportion Safe Ratio</u></b> |                        |   |                                  |
| Early Adopter                       | 0.05 **<br>(2.05)      | 0.08 ***<br>(3.99)                                  | 0.12 ***<br>(4.39)               |
| Late Adopter                        | 0.01<br>(0.46)         | 0.04<br>(1.48)                                      | 0.11 ***<br>(4.03)               |
| Early Adopter*IFRS                  | -0.27 ***<br>(-15.73)  | -0.27 ***<br>(-15.63)                               | -0.38 ***<br>(-15.3)             |
| Late Adopter*IFRS                   | -0.28 ***<br>(-7.74)   | -0.27 ***<br>(-7.54)                                | -0.28 ***<br>(-23.42)            |
| Leverage                            | 0.41 ***<br>(4.25)     | 0.40 ***<br>(3.86)                                  | 0.55 ***<br>(9.94)               |
| Size                                | 0.03 ***<br>(5.31)     | 0.02 ***<br>(4.81)                                  | -0.01 ***<br>(-4.97)             |
| Listed                              | -0.07 ***<br>(-3.07)   | -0.06 ***<br>(-2.96)                                | -0.05 **<br>(-2.26)              |
| Fixed effects                       | Country                | Institution type                                    | Country                          |
| No. of observations                 | 6117                   | 6117  | 27431                            |
| No. of unique banks                 | 883                    | 883   | 4118                             |
| R-squared                           | 0.18                   | 0.16  | 0.17                             |

Table 15. Regressions results for the IFRS adoption impact. *Proportion Safe Ratio*

We observe the impact of IFRS adoption for the *Proportion Safe Ratio* and for the *Results of Financial Operations*. The *Proportion Safe Ratio* decreases with the fair value accounting adoption for both early adopters and late adopters (the coefficients of both *Early Adopter\*IFRS* and *Late Adopter\*IFRS* are negative and significant) under the three analyzed scenarios. Interesting conclusions can be inferred from the control variables analysis. Highly leveraged firms are investing safer, an intuitive result. Also, bigger firms are opting for safer portfolios, a result we can infer from the consolidated results but contrary to the unconsolidated results (model 3). However, the magnitude of the *Size* coefficient, even if it significant, it is not sufficiently large to support a conclusion.

The quoted companies invest riskier than the unlisted ones. An explanation is their higher visibility by the market induces them to compete more and to be pressed to adopt riskier portfolios able to offer superior returns to the shareholders.

The results support *Hypothesis 1a*: the *Proportion Safe Ratio* is reduced, as it can be computed from the accounting balance sheets, once the fair value accounting is used.

|                                     | <i>Model 1</i><br>Main | <i>Model 2</i><br>Institution type<br>fixed effects | <i>Model 3</i><br>Unconsolidated |
|-------------------------------------|------------------------|---|----------------------------------|
| <b><u>Results of Fin. Oper.</u></b> |                        |   |                                  |
| Early Adopter                       | -163.05 ***<br>(-4.16) | -114.88 ***<br>(-3.58)                              | -12.56 ***<br>(-3.75)            |
| Late Adopter                        | -124.33 ***<br>(-3.25) | -51.17 *<br>(-1.67)                                 | -8.25 ***<br>(-3.35)             |
| Early Adopter*IFRS                  | 159.47 ***<br>(4.8)    | 144.24 ***<br>(4.35)                                | 8.42 ***<br>(2.81)               |
| Late Adopter*IFRS                   | 47.29<br>(0.78)        | 41.48<br>(0.68)                                     | 5.08 ***<br>(4)                  |
| Leverage                            | -622.61 ***<br>(-5.27) | -673.18 ***<br>(-5.69)                              | -4.30<br>(-1.28)                 |
| Size                                | 149.04 ***<br>(9.32)   | 149.14 ***<br>(9.15)                                | 5.30 ***<br>(11.18)              |
| Listed                              | 155.95 **<br>(2.47)    | 68.09<br>(1.23)                                     | 14.41 ***<br>(3.27)              |
| Fixed effects                       | Country                | Institution type                                    | Country                          |
| No. of observations                 | 6117                   | 6117  | 27431                            |
| No. of unique banks                 | 883                    | 883   | 4118                             |
| R-squared                           | 0.24                   | 0.23  | 0.15                             |

Table 16. Regressions results for the IFRS adoption impact. *Results of Financial Operations*

The regressions results for the *Results of Financial Operations* variable are supporting *Hypothesis 1b* that the fair value accounting impact increases the profits, in case of the *Early Adopter* banks. The coefficients of *Early Adopter\*IFRS* are all positive and significant. In case of the coefficient *Late Adopter\*IFRS*, it is significant only for the model 3, hence we cannot affirm the hypothesis is sustained in this analysis by the late adopters banks. The explanation for this result is similar to that for the unconsolidated reports of banks adopting in a mandatory way in 2005 (Table 11) and for the difference in difference analysis (Table 14): the banks that adopt IFRS in the last moment just because it is mandatory are the least prepared and they could not be advantaged by the IFRS adoption.

Also, higher profits are obtained by bigger and/or listed banks, and higher leverage works against the profits (in case of consolidated reports), again intuitive results.

The R<sup>2</sup> values are sufficiently large in both regression analyses from above.

An alternative design choice is to study the IFRS adoption effects only for the population of banks that adopt IFRS. This way we expect that the discovered effects to be more pronounced in the regression results. However, some changes in the model design are needed. As long as all the analyzed population consists of adopters, one of the indicators *Early Adopter* and *Late Adopter* is redundant. For simplicity, we are not distinguishing between early or late adopters. Instead we use the variable *PostIFRS* indicating the time period after IFRS adoption (1 for the first year with IFRS reports, 2 for the second, and so on). It measures the fair value accounting adoption effects, for the banks switching to IFRS. The analysis is done for the consolidated reports and with country fixed effects, like in the base model. The regression model is the following:

$$PortfolioEffects = \beta_0 + \beta_1 * PostIFRS + \beta_2 * Leverage + \beta_3 * Size + \beta_4 * Listed$$

|                     | <b>Proportion Safe Ratio</b> | <b>Results of Fin. Oper.</b> |
|---------------------|------------------------------|------------------------------|
| Postifrs            | -0.27 ***<br>(-17.66)        | 125.21 ***<br>(4.64)         |
| Leverage            | 0.48 ***<br>(4.57)           | -678.35 ***<br>(-4.29)       |
| Size                | 0.03 ***<br>(5.4)            | 187.27 ***<br>(9.49)         |
| Listed              | -0.04 *<br>(-1.93)           | 166.77 **<br>(2.57)          |
| Fixed effects       | Country                      | Country                      |
| No. of observations | 4441                         | 4441                         |
| No. of unique banks | 624                          | 624                          |
| R-squared           | 0.25                         | 0.28                         |

Table 17. Regressions results for the IFRS adoption impact. Alternative approach with *PostIFRS* effects

We obtain results confirming our first tests on *Hypothesis 1*. The impact of IFRS adoption reduces the *Proportion Safe Ratio* and increases the *Results of Financial Operations*, as they can be observed from the financial results. The signs and interpretation of the control variables are the same as in the previous models. We can conclude that *Hypothesis 1* is supported by the multivariate tests. This analysis represents the link with the next step: the post adoption trends.

#### 4.2 Post-adoption trends (*Hypothesis 2*)

Our objective with the present study is to distinguish the portfolio effects around the IFRS adoption. The regressions in section 4.1 proved that the impact of IFRS (i.e. comparing all the local vs. all the IFRS computed portfolio indicators) on the *Proportion Safe Ratio* and the *Results of Financial Operations* are those expected in our *Hypothesis 1*. We are aware that the portfolio indicators computed under the local standards are not reflecting the actualized values of the variables, because they are measured with the historic cost accounting. Consequently, we concentrate in this section only to the post adoption period indicators, measured with fair value accounting, hence reflecting the market based portfolio effects. We expect that the IFRS adoption changes the portfolio selection behavior and we want to detect this intention in the years after IFRS adoption. In order to detect the portfolio strategy during the post adoption years we measure the portfolio effects trend after adoption. The regressions we use check first for the time fixed-effects with respect to post adoption years, in case of adopters banks:

$$PortfolioEffects = \gamma_0 + \gamma_1 * Leverage + \gamma_2 * Size + \gamma_3 * Listed + \gamma_4 * PostAdoption1 + \gamma_5 * PostAdoption2 + \gamma_6 * PostAdoption3$$

The variables *PostAdoption* are indicating the first, the second and respectively the third year after adoption (are equal to 1 for the respective post adoption years and zero otherwise).

In order to detect whether the possible post adoption trends are a characteristic of the IFRS adoption, we have to analyze in a similar manner the non-adopters banks population. For non-adopters, we check whether there are similar portfolio effects during the period 2005-2007, coinciding basically with the three years after adoption in the EU15 population

of banks. We are eliminating the *Listed* indicator due to the collinearity problems it caused. Symmetrically to the previous regression indicators, the variables *Year* are indicating the years 2005, 2006 and 2007.

$$PortfolioEffects = \gamma_0 + \gamma_1 * Leverage + \gamma_2 * Size + \gamma_3 * Year2005 + \gamma_4 * Year2006 + \gamma_5 * Year2007$$

It is important to mention that for non-adopters, the indicators are still using historic cost accounting; hence they do not present the same degree of reliability as the indicators for the adopters during the post adoption period. However, we expect the regressions for non-adopters would capture, (even in a smaller proportion, due to the lack of reliability), the trends if they would be present in this population.

We run the two regressions for the consolidated reports and then for the unconsolidated reports population, as a robustness check.

|                     | <b>Proportion Safe Ratio</b> | <b>Results of Fin. Oper.</b> |
|---------------------|------------------------------|------------------------------|
| Leverage            | 0.55 ***<br>(5.22)           | -832.99 ***<br>(-5.42)       |
| Size                | 0.02 ***<br>(4.07)           | 189.35 ***<br>(9.12)         |
| Listed              | -0.04 *<br>(-1.84)           | 108.11 *<br>(1.85)           |
| Postadoption1       | -0.27 ***<br>(-15.81)        | 69.92 ***<br>(3.28)          |
| Postadoption2       | -0.25 ***<br>(-15.97)        | 110.08 ***<br>(4.46)         |
| Postadoption3       | -0.23 ***<br>(-13.51)        | 154.38 ***<br>(4.71)         |
| No. of observations | 4441                         | 4441                         |
| No. of unique banks | 624                          | 624                          |
| R-squared           | 0.19                         | 0.25                         |

Table 18. Regressions results for the trends after IFRS adoption. Consolidated Reports. Adopters.

Looking at the *PostAdoption* coefficients (Table 18), we observe first that they have the expected signs supporting *Hypothesis 1*: the impact of IFRS adoption is the reduction of *Proportion Safe Ratio* and the increment of the *Results of Financial Operations*. Moreover, we can distinguish the trends with the portfolio effects after fair value accounting adoption: the reduction of *Proportion Safe Ratio* is year after year less pronounced (the coefficients of *PostAdoption* are decreasing in time, in absolute values) compared with the pre-adoption period. This implies the portfolios are adjusted year by year after adoption towards safer portfolios, in market based terms, supporting *Hypothesis 2*: the IFRS adoption reduces the banks risk appetite. Also, the *Results of Financial Operations* are increasing year after year during the post adoption period.

When we apply the regressions for the non-adopters (Table 19), the trends could not be observed. This result emphasizes the support for *Hypothesis 2*, that the portfolio adjustments are realized only by the adopters; hence they are a consequence of the fair value accounting adoption.

The control coefficients from the two regressions are conserving the signs from the base model.

|                     | <b>Proportion Safe<br/>Ratio</b> | <b>Results of<br/>Fin. Oper.</b> |
|---------------------|----------------------------------|----------------------------------|
| Leverage            | 0.17<br>(0.91)                   | -150.49<br>(-1.21)               |
| Size                | 0.04 ***<br>(2.89)               | 8.38 **<br>(2.41)                |
| Year2005            | -0.06 ***<br>(-4.35)             | 8.26<br>(1.13)                   |
| Year2006            | -0.06 ***<br>(-2.81)             | -8.93<br>(-0.79)                 |
| Year2007            | -0.09 *<br>(-1.92)               | 5.32<br>(0.4)                    |
| No. of observations | 1676                             | 1676                             |
| No. of unique banks | 259                              | 259                              |
| R-squared           | 0.05                             | 0.07                             |

Table 19. Regressions results for the trends during 2005-2007 period. Consolidated Reports. Non-adopters.

We repeat the two regressions for the unconsolidated population (Tables 20 and 21). Unfortunately, for IFRS adopters, the discovered trends are opposite in case of the *Proportion Safe Ratio* to the expected ones and the tendency is not very clear in case of the *Results of Financial Operations*. No trends are observed for the non-adopters, as expected. The risk appetite reduction is not observed hence in case of the unconsolidated reports. Given that the most relevant information about banks financial decisions is presented in their consolidated reports, we conclude that overall the analysis of this subsection supports *Hypothesis 2*.

|                     | <b>Proportion Safe Ratio</b> | <b>Results of Fin. Oper.</b> |
|---------------------|------------------------------|------------------------------|
| Leverage            | 0.66 ***<br>(7.58)           | -3.54<br>(-0.52)             |
| Size                | -0.04 ***<br>(-10.38)        | 5.22 ***<br>(8.26)           |
| Listed              | 0.01<br>(0.28)               | 11.44 **<br>(2.01)           |
| Postadoption1       | -0.29 ***<br>(-24.69)        | 3.18 ***<br>(3.1)            |
| Postadoption2       | -0.30 ***<br>(-26.48)        | 6.52 ***<br>(5.36)           |
| Postadoption3       | -0.32 ***<br>(-14.89)        | 5.18 *<br>(1.72)             |
| No. of observations | 6851                         | 6851                         |
| No. of unique banks | 1065                         | 1065                         |
| R-squared           | 0.26                         | 0.15                         |

Table 20. Regressions results for the trends of *Proportion Safe Ratio* after IFRS adoption. Unconsolidated Reports. Adopters.

|                     | <b>Proportion Safe<br/>Ratio</b> | <b>Results of<br/>Fin. Oper.</b> |
|---------------------|----------------------------------|----------------------------------|
| Leverage            | 0.59 ***<br>(9.87)               | -17.69 ***<br>(-5.28)            |
| Size                | -0.01 ***<br>(-3.37)             | 5.73 ***<br>(8.83)               |
| Year2005            | -0.04 ***<br>(-9.38)             | 0.16<br>(0.5)                    |
| Year2006            | -0.04 ***<br>(-8.96)             | 1.41 ***<br>(3.67)               |
| Year2007            | -0.002<br>(-0.14)                | -2.38 *<br>(-1.71)               |
| No. of observations | 20580                            | 20580                            |
| No. of unique banks | 3053                             | 3053                             |
| R-squared           | 0.06                             | 0.12                             |

Table 21. Regressions results for the trends during 2005-2007 period. Unconsolidated Reports. Non-adopters.

### 4.3 Heterogeneity in the portfolio effects (Cross-sectional variation)

The case of French origin countries and particularly French banks suggest us the idea of different impacts of the IFRS adoption for the EU15 banks, depending on the differences between the local standards and the IFRS ones. The cross-sectional EU15 sample variation possibility motivates the present sub-section analyses.

The first approach is to realize a partition of the observations by groups of countries, depending on their legal origin, by using La Porta et al. (1998) classification. The procedure consists in applying the base model to each one of the country groups in part. The disadvantage of this analysis is that the comparisons between country groups are realized by comparing regression coefficients from distinct regressions.

As an alternative approach we proceed like Daske et al. (2008) by realizing a partition of the IFRS firm-year observations by countries' institutional frameworks using country-level factors. In particular we use two indicators: "the rule of law" in 2005 and the "summary score" of how local GAAP differ from IAS/IFRS.

We start our analysis by following the first approach based on La Porta et al. (1998) classification. We group the countries as having English Origin (United Kingdom, Ireland), French origin (France, Greece, Italy, Netherlands, Portugal, Spain, Belgium, Luxembourg<sup>7</sup>), German Origin (Austria, Germany) and Scandinavian Origin (Denmark, Finland, Sweden). Applying the base model for each legal group in part we obtain the following results.

|                                     | <b>English</b>       | <b>French</b>         | <b>German</b>      | <b>Scandinavian</b>  |
|-------------------------------------|----------------------|-----------------------|--------------------|----------------------|
| <b><u>Proportion Safe Ratio</u></b> |                      |                       |                    |                      |
| Early Adopter                       | 0.19 ***<br>(3.16)   | 0.01<br>(0.45)        | 0.07<br>(0.98)     | -0.05<br>(-0.64)     |
| Late Adopter                        | 0.15 *<br>(1.96)     | -0.05<br>(-1.23)      | 0.16 ***<br>(5.61) | 0.10<br>(1.43)       |
| Early Adopter*IFRS                  | -0.24 ***<br>(-6.02) | -0.28 ***<br>(-14.31) | -0.18 *<br>(-1.93) | -0.30 ***<br>(-4.8)  |
| Late Adopter*IFRS                   | -0.33 ***<br>(-3.49) | -0.24 ***<br>(-5.89)  | -0.35 **<br>(-2.2) | -0.49 ***<br>(-3.46) |
| Leverage                            | 0.37<br>(1.49)       | 0.32 **<br>(2.38)     | 0.63 ***<br>(2.89) | 0.57 ***<br>(3.33)   |
| Size                                | 0.02<br>(1.24)       | 0.03 ***<br>(4.05)    | 0.03 **<br>(2.28)  | 0.04 ***<br>(3.07)   |
| Listed                              | -0.14 **<br>(-2.31)  | -0.06 **<br>(-2.17)   | -0.01<br>(-0.11)   | 0.10<br>(1.48)       |
| No. of observations                 | 1166                 | 3347                  | 1065               | 539                  |
| No. of unique banks                 | 182                  | 481                   | 145                | 75                   |
| R-squared                           | 0.14                 | 0.17                  | 0.14               | 0.25                 |

Table 22. Regressions results for the groups of legal origin. Consolidated Reports.  
*Proportion Safe Ratio*

The adjustments for *Proportion Safe Ratio* are more pronounced for the *Early Adopters* in case of French and Scandinavian origin as compared with English and German origin countries, an expected result in line with the results from the section 3. On the other hand, the French origin countries are adjusting less the portfolio when they are *Late Adopters*. The interpretation is that the French *Late Adopters* banks that adopt IFRS in a mandatory

<sup>7</sup> Luxembourg is not included by La Porta et al. (1998), but cited by this work as having French origin from Glendon et al. (1994)

manner represent the French banks that are not prepared for the fair value accounting. This explains why they find difficult to adjust the portfolios after IFRS adoption.

Regarding the *Results of Financial Operations* (Table 23), when partitioning the sample by country groups only the *Early Adopter* coefficients for the IFRS impact of the English and French origin countries are positive and significant, hence only these categories of banks are affected by the IFRS adoption. Moreover, the French origin countries are less advantaged by the fair value accounting adoption than the English origin ones, a result coherent with the negative impact of IFRS adoption in 2004 for the French banks.

The conclusion of this analysis constitutes an additional support for the French banks opposition: on aggregate, they are the least advantaged by the fair value accounting adoption.

|                                     | <b>English</b>         | <b>French</b>          | <b>German</b>         | <b>Scandinavian</b> |
|-------------------------------------|------------------------|------------------------|-----------------------|---------------------|
| <b><u>Results of Fin. Oper.</u></b> |                        |                        |                       |                     |
| Early Adopter                       | -265.62 ***<br>(-2.78) | -182.36 ***<br>(-3.66) | -176.51 **<br>(-2.45) | -57.04 *<br>(-1.77) |
| Late Adopter                        | -249.42 ***<br>(-2.96) | -92.44 *<br>(-1.91)    | -169.66 **<br>(-2.44) | 128.13<br>(0.84)    |
| Early Adopter*IFRS                  | 330.92 ***<br>(3.15)   | 114.94 ***<br>(2.94)   | 36.95<br>(1.11)       | 32.00<br>(1.11)     |
| Late Adopter*IFRS                   | -3.30<br>(-0.07)       | 69.68<br>(0.79)        | 111.87<br>(0.99)      | -190.05<br>(-1.06)  |
| Leverage                            | -701.05 **<br>(-2.3)   | -939.04 ***<br>(-4.83) | -220.26 *<br>(-1.7)   | -72.53 *<br>(-1.78) |
| Size                                | 178.91 ***<br>(5.1)    | 201.40 ***<br>(7.36)   | 65.32 ***<br>(3.02)   | 34.56 ***<br>(4.14) |
| Listed                              | 120.32<br>(0.74)       | 126.92<br>(1.51)       | 146.78<br>(1.54)      | 57.17<br>(1.61)     |
| No. of observations                 | 1166                   | 3347                   | 1065                  | 539                 |
| No. of unique banks                 | 182                    | 481                    | 145                   | 75                  |
| R-squared                           | 0.23                   | 0.29                   | 0.14                  | 0.11                |

Table 23. Regressions results for the groups of legal origin. Consolidated Reports. *Results of Financial Operations*

For the second analysis, similarly to Daske et al. (2008), we realize a partition of the IFRS firm-year observations by countries' institutional frameworks using two different indicators as country-level factors.

The first indicator, "rule of law" in 2005, is computed by Kaufmann, Kraay and Mastruzzi (2007). Higher values of the indicators represent countries with stricter enforcement regimes. As Daske et al. (2008), table 6, we use the original values from the cited study for the countries of EU15.

In a similar manner, to capture the degree to which the accounting rules change with the switch to IFRS, we use as a second indicator the Bae, Tan and Welker (2008) "summary score" of how local GAAP differ from IAS on 21 key accounting dimensions. Higher scores represent more differences between standards. However, the values for the "summary score" indicators we are using are not the original Bae, Tan and Welker (2008) values. Similar to Daske et al. (2008), we are concerned about the fact that the country-level institutional variables are all highly correlated and they are outcomes of more fundamental qualities of countries' institutional frameworks. The procedure Daske et al. (2008) use to address this concern is to orthogonalize the differences with respect to more fundamental country characteristics. That is, they first regress the raw values of differences on countries' legal origin (La Porta et al. (1998) ) and the log transformed average gross domestic product per capita (World Bank) and then use as indicators the residuals from those regressions to form partitions in the cross-sectional analyses. In our study we use as indicators the residuals of Daske et al. (2008) regressions presented in table 6 of their research study.

In case of the first proxy, the legal enforcement, measured as "rule of law", Daske et al. (2008) does not apply the same orthogonalization procedure because they consider it is more likely to be a fundamental element and we make the same assumption.

We transform these two continuous institutional factors into binary variables (0 or 1) splitting by the country medians of our EU15 sample. Then we interact these binary *ConditionalVariables* created (*RuleofLaw* and *DifferenceLocalIFRS*) with each of the IFRS indicator from the base model leading to the following empirical model.

$$\begin{aligned}
\text{PortfolioEffects} = & \delta_0 + \delta_1 * \text{Early Adopter} + \delta_2 * \text{Early Adopter} * \text{Conditional Variable} + \delta_3 * \text{Late Adopter} + \delta_4 * \\
& \text{Late Adopter} * \text{Conditional Variable} + \delta_5 * \text{Early Adopter} * \text{IFRS} + \delta_6 * \\
& \text{Early Adopter} * \text{IFRS} * \text{Conditional Variable} + \delta_7 * \text{Late Adopter} * \text{IFRS} + \delta_8 * \\
& \text{Late Adopter} * \text{IFRS} * \text{Conditional Variable} + \delta_9 * \text{Leverage} + \delta_{10} * \text{Size} + \delta_{11} * \text{Listed}
\end{aligned}$$

The interpretation of the coefficients for this regression is different from the base model. The coefficients on *Early Adopter*, *Late Adopter* and *Early Adopter\*IFRS*, *Late Adopter\*IFRS* apply only to IFRS adopters from countries where the conditional variable is below (i.e. <) the median. The interaction terms with the *Conditional Variable* represent the incremental portfolio effects for banks from countries where the conditional variable is above (i.e. >) the median. In order to determine the total effects for those latter countries, we have to sum the two corresponding coefficients. We provide the statistical significance of the corresponding joint coefficients (*p*-values from the Wald tests). The control variables, the sample and the fixed effects are the same as for the base model.

We present first the lists of countries according to the categories induced by the two indicators. The countries with higher coefficients of "rule of law" are Austria, Denmark, Finland, Germany, Ireland, Luxembourg, Netherlands, Sweden and United Kingdom. In other words, they are the English, German, Scandinavian origin countries and from the French origin-Luxembourg and Netherlands, hence without France, Greece, Italy, Portugal, Spain, Belgium.

The countries with higher differences of "summary score" between the local and IFRS standards are Austria, Belgium, Finland, Germany, Greece, Luxembourg, Portugal, Spain. They are the German, one Scandinavian (Finland), and the French origin countries-without France, Italy and Netherlands.

We expect the portfolio effects after IFRS adoption to be evident in countries with a relatively weak "rule of law". In these countries it was easier before the IFRS adoption to benefit from the possibility offered by the historic cost accounting to avoid the rigorous impairment adjustments. For the banks from these countries the impact to the *Proportion Safe Ratio* and the *Results of Financial Operations* after the IFRS application it should be the most pronounced. In other words we expect negative incremental portfolio (i.e. opposed sign coefficients than the main ones) effects in countries with stronger "rule of law"

coefficients. We discuss now the predictions with respect to the effects of the IFRS adoption for the banks in the countries with higher differences between local standards and IFRS. The intuition says that these countries should face the most pronounced effects for the change of the accounting indicators computed. However, by looking at the list of the countries with this characteristic we discover that France and Italy, two countries where the preliminary analyses show that they are the most affected by the IFRS adoption, are not included in the category of greater difference between local GAAP and IFRS. Their exclusion makes us uncertain about the conclusion regarding the effects of IFRS application on the category of countries with higher differences between the local standards and IFRS.

Unfortunately, the results of the regressions are showing that there are no incremental post adoption effects for countries with stronger "rule of law" and with larger differences between local GAAP and IFRS. We conclude this because the coefficients (6) and (8) are not significant, while (5) and (7) are significant (except the case of (7) *Results of Financial Operations* for the *Late Adopters*).

|  | <u>Proportion Safe Ratio</u> |                                      | <u>Results of Fin. Oper.</u> |                                      |
|--|------------------------------|--------------------------------------|------------------------------|--------------------------------------|
|  | <i>Rule of Law</i>           | <i>Difference<br/>Local vs. IFRS</i> | <i>Rule of Law</i>           | <i>Difference<br/>Local vs. IFRS</i> |
| (1) Early Adopter                          | 0.07 ***<br>(3.16)           | 0.07 ***<br>(2.9)                    | -83.43 **<br>(-2.25)         | -65.97 *<br>(-1.76)                  |
| (2) Early Adopter* <i>Conditional</i>      | 0.05 **<br>(2.11)            | 0.06 **<br>(2.52)                    | -54.26<br>(-1.01)            | -100.53 **<br>(-2.5)                 |
| Test of (1)+(2)=0 [p-value]                | [0.00]                       | [0.00]                               | [0.00]                       | [0.00]                               |
| (3) Late Adopter                           | 0.002<br>(0.07)              | 0.04<br>(0.94)                       | -12.91<br>(-0.4)             | -64.21<br>(-1.58)                    |
| (4) Late Adopter* <i>Conditional</i>       | 0.14 ***<br>(3.23)           | 0.01<br>(0.29)                       | -125.00 **<br>(-2.27)        | 34.60<br>(0.75)                      |
| Test of (3)+(4)=0 [p-value]                | [0.00]                       | [0.18]                               | [0.01]                       | [0.40]                               |
| (5) Early Adopter*IFRS                     | -0.29 ***<br>(-13.49)        | -0.29 ***<br>(-12.84)                | 148.66 ***<br>(3.74)         | 146.35 ***<br>(3.32)                 |
| (6) Early Adopter*IFRS* <i>Conditional</i> | 0.04<br>(1.04)               | 0.04<br>(1.25)                       | -2.16<br>(-0.03)             | 5.52<br>(0.08)                       |
| Test of (5)+(6)=0 [p-value]                | [0.00]                       | [0.00]                               | [0.01]                       | [0.00]                               |
| (7) Late Adopter*IFRS                      | -0.24 ***<br>(-5.79)         | -0.31 ***<br>(-6.23)                 | 114.26<br>(1.21)             | -17.21<br>(-0.33)                    |
| (8) Late Adopter*IFRS* <i>Conditional</i>  | -0.10<br>(-1.36)             | 0.10<br>(1.45)                       | -150.06<br>(-1.37)           | 156.47<br>(1.11)                     |
| Test of (7)+(8)=0 [p-value]                | [0.00]                       | [0.00]                               | [0.52]                       | [0.29]                               |
| (9) Leverage                               | 0.41 ***<br>(3.99)           | 0.41 ***<br>(4.01)                   | -697.23 ***<br>(-6.18)       | -693.23 ***<br>(-6.18)               |
| (10) Size                                  | 0.02 ***<br>(4.6)            | 0.02 ***<br>(5.01)                   | 149.59 ***<br>(9)            | 147.22 ***<br>(9.11)                 |
| (11) Listed                                | -0.07 ***<br>(-3.08)         | -0.06 ***<br>(-2.83)                 | 109.99 *<br>(1.91)           | 107.01 *<br>(1.87)                   |
| No. of observations                        | 4441                         | 4441                                 | 4441                         | 4441                                 |
| No. of unique banks                        | 624                          | 624                                  | 624                          | 624                                  |
| R-squared                                  | 0.15                         | 0.15                                 | 0.22                         | 0.22                                 |

Table 24. Regressions results for the institutional factors. Consolidated Reports.

The conclusion of this last analysis is that the previously introduced institutional factors at the country level are not explaining the variety of the IFRS impacts. Instead, the specificity of the local regulations with respect to the severity of the impairment rules and the possibility to recognize the upward moves of the financial instruments are important

determinants for the diversity of the IFRS adoption effects. Such a detailed analysis will constitute the subject of our future research.

## **5. Conclusions**

The recent literature advocates that the adoption of fair value accounting is not neutral for the portfolio selection decisions of the financial institutions. It proves analytically that the accounting regulation is not indifferent for a portfolio manager: the balance sheet and respectively income values are not identical for the same economic reality, when different accounting systems are in force. Also, in environments where the accounting numbers count, the firms, depending on their objectives, are adjusting their portfolios when the regulation imposes a change from the Historical Cost regime (pure or with impairment) to the Fair Value accounting. The change to Fair Value accounting leads to a more conservative portfolio, depending on the severity of the impairment rule in force during the historic cost regime.

In the present study we realize some empirical tests of the hypotheses developed in the analytical literature. With this objective in mind, our interest is to capture the decisions regarding the trading portfolios of EU15 financial companies -banks and similar- around the adoption of IFRS framework in the period surrounding the year 2005. We analyze an extensive database composed by 4,497 banks (unconsolidated accounting reports) and respectively 941 banks (consolidated reports) for the period 1999-2007. In case of Spain the analyzed horizon is prolonged until August 2009.

The first result found is that the fair value accounting adoption around the year 2005 reveals a significantly riskier trading portfolio than the image presented if the banks would have been continued to present the results according to the historic cost accounting. Also, the accounting profits of the trading portfolio are higher with fair value accounting than with the historic cost accounting regime. This result is due to the specificity of the period when the IFRS adoption is mandatory. The adoption happens around the year 2005, a good period of the economy, when the risky instruments increase more in value than the fixed income ones and it ends before the recent major financial crisis commence.

Also, we discover that the impact of the fair value accounting is not uniform amongst the European countries. The previous institutional positions of the French authorities against the IAS 39 adoption suggested us that they would be the most affected by the fair value accounting introduction. We obtain in our study that the differences between the historic cost and the fair value accounting profits for the same economic reality are more pronounced for the French origin countries and in particular disadvantage the French banks, contrary to the rest of the European countries. In other words, our data proved that the French banks are negatively affected by the fair value accounting adoption. A similar negative impact is observed in case of the Cooperatives.

We proved also that the IFRS adoption is not neutral and induces more conservative portfolios, i.e. it reduces banks risk appetite, as the analytical models predict. The adjustments to more conservative portfolios once IFRS is adopted are significant because the previous accounting regime before IFRS adoption was more closed to a pure historic cost accounting than to a lower of the cost and the market and it incentivized the risk taking attitude of the banks.

The overall conclusions of the study sustain the hypotheses developed in the analytical literature.

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