Does the Standard-Setter's Opinion Matter?
An Analysis of the Impact of the IASB Letter's Disclosure on the Stock Returns of European Banks with Greek Bond Exposure*

Cristina Zardo Calvi
Master, Department of Accounting, Institute Foundation of Espírito Santo for Studies in Accounting, Economics and Finance
E-mail: cristinazardo@gmail.com

Fernando Caio Galdi
Ph.D. Department of Accounting and Finance, FUCAPE Business School
E-mail: fernando.galdi@fucape.br

ABSTRACT

This study investigates whether there is evidence that the letter issued and disclosed to the market by the international accounting standard-setter the International Accounting Standards Board (IASB), which warned of an inadequate accounting for, had informational content and caused changes in the stock prices of banks in Germany, Spain, France, Italy and the United Kingdom whose portfolios included Greek bonds. This analysis is important because the letter represents the first time that the IASB took a stand on the adequacy of published financial statements compared to international accounting standards (International Financial Reporting Standards, or IFRS). To perform this analysis, the event date was identified as the day on which the letter was publicly disclosed by the specialized press. Although the letter was published on August 30, 2011, it was dated August 4, 2011, and according to the IASB, it was disclosed on August 30 because the day before, the Financial Times reported concerns by the IASB regarding accounting inadequacies that were occurring in the market. To assess the impact of the event, the market-adjusted return metric was used, and using the difference-in-differences approach, it was possible to test the effect of the interaction on the treatment group (i.e., banks that owned Greek bonds) during the time after the letter was published. For this test, a regression was performed for each event window using the Ordinary Least Squares method (OLS) with pooled data. The results show there is evidence that the standard-setter's opinion is relevant, i.e., that the IASB's letter had an impact on the stock return of banks that owned Greek bonds during the period of analysis.

Keywords: Event study; standard-setting body; financial instrument accounting; financial crisis.

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1   INTRODUCTION

On August 30, 2011, the International Accounting Standards Board (IASB), the international accounting standard-setter, took a stand regarding the adequacy of companies' financial statements. On this date, the IASB publicly disclosed a letter that it had sent to the European Securities and Markets Authority (ESMA) claiming that there were signs in the market that some European companies were applying the accounting requirements for measuring fair value and impairment losses in a way that was different from International Accounting Standard (IAS) 39, the norm that addresses the recognition and measurement of financial instruments. Although the letter was published on August 30, it was dated August 4, and according to the IASB, it was only disclosed because the previous day the Financial Times had reported concerns by the IASB itself regarding accounting inadequacies that were occurring in the market. Because of this discrepancy, this study singles out two important dates: August 4, 2011, the day that the IASB letter was sent to the ESMA, and August 30, 2011, the day that the letter was made public.

According to the IASB, inadequacies were particularly evident in the accounting of high-risk sovereign debts, including Greek government bonds, especially in measuring the fair value of those instruments classified as available for sale. Financial assets that are available for sale must be measured by their fair value, and changes in the measurement of this fair value must be presented in other comprehensive results. However, IAS 39 requires that a company acknowledge any loss due to impairment in its profit or loss when there is objective evidence that the value for which financial assets are registered cannot be redeemed in the future. If it is ascertained that the value for which assets are registered can be redeemed in the future, the company continues to acknowledge the reduction in fair value in other comprehensive results. However, if it is ascertained that the assets are not registered for a value that can be recovered in the future, the company acknowledges this reduction in fair value in its profit or loss, i.e., the impairment of financial assets available for sale is calculated based on the assets' fair value.

Still, the letter explains that some companies were not following IAS 39 when determining whether Greek bonds, classified as available for sale, were registered using a value that could be recovered in the future. These companies were using the impact assessed on the current value of future cash flows resulting from the proposed restructuring of said bonds, instead of using the value reflected in current market prices, as required by IAS 39. Moreover, some of these companies claimed to rely on internal assessment methodologies instead of using market prices to measure assets' fair values in the balance completed on June 30, 2011. The reason usually given for using these models instead of market prices is that the market for Greek bonds was inactive at that time, and accordingly, in the opinion of

the companies, it did not provide reliable price information. The letter responds to this argument, saying that although the level of commercial activity involving Greek bonds had decreased, operations were still taking place. Furthermore, IAS 39 clearly states that unless there is evidence that transaction prices no longer represent fair value, transactional prices should be used to measure fair value.

These events established a situation in which the accounting standard-setter exposed to the market its dissatisfaction with the numbers published by European companies, especially those that possessed Greek sovereign bonds. Financial Times headlines from mid-June through August of 2011 confirm that the Greek debt crisis affected the major European banks. For example, headlines stated that "Only decisive action to resolve fate of Greece can restore confidence in banks" and that "Europe's leading banks suffered their worst day since Greece was first bailed out as the European Central Bank's efforts to extend liquidity failed to mollify fearful investors". Within the crisis environment that existed at the time, with many European banks experiencing both press scrutiny and market mistrust, this type of information could have had significant economic consequences if it was new to market agents.

In June 2011, the Financial Times disclosed a table drafted by Barclays Capital that estimated the 40 biggest holders of Greek bonds and debt securities. According to the table, most large European banks kept Greek securities in their portfolios, and therefore, the IASB letter's consequences were especially relevant to those banks.

In light of this scenario, the present study examines the following research question: Did the IASB letter have an impact on the stock return of those banks in Germany, Spain, France, Italy and the United Kingdom that possessed Greek government sovereign debt securities? Does the standard-setter's opinion matter to the market? To answer these questions, an event study with the following null hypothesis H0 was formulated: The IASB letter had no impact on the stock return of banks that possessed Greek bonds. Alternatively H1 was formulated: The IASB letter had an impact on the stock return of banks that possessed Greek bonds.

This study is relevant because it opens an investigation into the market's reaction to the IASB's decision to take a stand. The first consequence to be assessed relates to the market's efficiency regarding the accounting treatment given to transactions with financial instruments and its assessment by fair value. In this sense, there would have been an impact on the stock return of banks with Greek bonds in their portfolios only if the market had not incorporated the information on the drop in Greek bond prices into stock prices. However, that information was already available to the market before the letter was issued by the IASB. The second consequence is related to investors' use of accounting information in stock assessment models. A market re-

action to the IASB letter means that accounting numbers are indeed used in pricing models.

Previous studies (Armstrong, Barth, Jagolinzer & Riedl, 2010; Bischof, Brüggemann & Daske, 2010; Hammersley, Myers & Shakespeare, 2008; Paananen, Renders & Shima, 2012) have shown that some standard-setting or regulatory events have had an impact on companies' returns or prices. Thus, it was hoped that evidence corroborating the letter's effects on the analyzed banks' returns would be found. However, this study is different from the rest in that it analyzes a particular event that has been little explored because it

relates to a standard-setting body's dissatisfaction with how its standards are applied.

After reviewing the theoretical framework and definitions referring to the methodology, an event study was designed, and models were estimated using the Ordinary Least Squares method (OLS) on both the pooled data and difference-in-differences (diff-in-diff) models. The results found herein indicate that disclosure to the market of the letter sent by the IASB to the European Securities and Markets Authority (ESMA) had an impact on the stock returns of the banks analyzed in this study.

2 THEORETICAL FRAMEWORK

The IASB is an independent body of the IFRS Foundation (International Financial Reporting Standard Foundation) that sets accounting standards. Therefore, the IASB's stand on the specific application of a given standard, as happened in the case analyzed in this article, was new to the market because it was inconsistent with the IFRS's constitution. According to article 37 of that document, the IASB has full responsibility for all technical issues related to drafting, exposition minutes and IFRS issuance (except for interpretations) and the approval and issuing of interpretations developed by the Interpretation Committee; diverging opinions must be included in each of these processes. Article 37 further provides that the IASB may consider conducting field tests (both in developed countries and emerging markets) to ensure that its proposed standards are practical and viable in every environment, although there is no obligation to conduct field tests for each and every project.

In the face of article 37, one might conclude that it is not within IASB's competence to regulate the application of the IFRS; rather, it may only draft and issue them. However, the second article of the IFRS constitution provides that one of the IFRS's goals is to promote the rigorous use and application of the issued standards. It can thus be inferred that the IASB cannot regulate the institutions that adopt the IFRS accounting standard, but it can promote their application.

The IASB was created on April 1, 2001, and from that date on, it assumed the technical responsibilities of the International Accounting Standards Committee (IASC), a committee created in 1973 by the professional accounting bodies of 10 countries to formulate and publish a new international accounting regulation standard that could be universally accepted. In its first decade of activity, accountant Sir David Tweedie was president of the IASB, which worked to draft, issue and promote the IAS and IFRS. During this period, the IASB did not opine on how its standards were applied, i.e., it did not issue any documents pointing out companies' failures or misunderstandings in applying the standards.

On June 1, 2011, after Sir Tweedie had directed the IASB for 10 years, a new president was appointed: Hans Hoogervorst, former director of the Netherlands Authority for the

Financial Markets. Ian Mackintosh, former president of the British Accounting Standards Board, was appointed vice-president. Baker (2011) recalls that, according to the CPA Journal, the appointments of Hoogervorst and Mackintosh marked a significant change in the IASB's leadership. On June 26, 2011, after the change in the IASB's presidency was announced, the Financial Times highlighted that Hoogervorst's leadership would politicize the IASB's tasks. Furthermore, because Hoogervorst was not an accountant, there would be a steep learning curve.

Before being appointed as IASB president, Hoogervorst was president of the executive council of the Dutch Authority for Financial Markets (AFM) and president of the Technical Committee of the International Organization of Securities Commissions (IOSCO). Hoogervorst had also been appointed co-president of the Financial Crisis Advisory Group, a high-level group of business leaders with experience in international markets, to provide support to the IASB and the FASB in their joint response to the financial crisis.

Between 1998 and 2007, Hoogervorst held a number of offices in the Dutch government, including the ministries of Finance, Health, Welfare and Sports; he also served as the State Secretary for Social Affairs. Earlier, Hoogervorst was a member and senior political counselor in Dutch Parliament and the Ministry of Finance; he also worked as a banking officer for the National Bank of Washington.

As president of the IASB, one of Hoogervorst's first actions was to sign, on August 4, 2011, the letter sent to ESMA to note inconsistencies in the accounting of Greek bonds by European banks. That action furthered the goal of article 2 of the IFRS constitution—to promote the rigorous usage and application of its standards. However, the issuance of the letter did not exceed the IASB's power because it was informative, not punitive.

Given the novelty of the facts described so far, evidence is provided below to support the proposed research question. This evidence primarily focuses on studies that have analyzed the impact of changes in standards during periods of financial crisis on the effect of adopting IAS 39 and on investors' behavior before financial institutions reported balances in a manner that failed to conform to accounting regulations.

Armstrong, Barth, Jagolinzer and Riedl (2010) analyze the reactions of the European stock market to 16 events associated with the adoption of IFRS. The authors describe a model in which the dependent variable is the cumulative market-adjusted return. The independent variables are related to the quality of each company's information, its size, the traded-stock volume, the form of each country's legal system and the companies' accounting standards, among others. In general, these authors' results suggest that by adopting the IFRS in Europe, investors expect to obtain net benefits associated with an increase in the quality of information, a reduction in the asymmetry of information, more rigorous application of standards and convergence. The cumulative market-adjusted return was also used in the present study as a result of the desire to capture abnormal returns connected to the disclosure of the IASB letter.

Studies assessing companies' non-conformity to accounting standards have already been conducted for various economic periods, such as, for example, the study by Huizinga and Laeven (2011). These authors analyze the pricing and form of accounting of American banks listed in the stock exchanges during the American mortgage crisis. In 2008, for most North American banks, the market value of their assets was below the value registered in their accounting. This demonstrates that the accounting value of North American banks was inflated. Coherent with this finding, the authors show that the market discounts the value of banks' housing loans and the value of securities backed by mortgages, using accounting values as reference. The discrepancy between the market and accounting values suggests that banks were slow to adjust their accounting values to reflect the market's expectations of future losses. Thus, these authors' results indicate that banks' balances offered a distorted view of their financial health, suggesting regulatory tolerance of non-conformity to accounting regulations.

In addition, other studies have sought to assess the impact of changes in accounting standards on the capital markets (Gebhardt & Novotny-Farkas, 2011; Bischof et al., 2010; Paananen et al., 2012), along with market reactions to the disclosure of companies' control deficiencies (Hammersley et al., 2008).

Gebhardt and Novotny-Farkas (2011) analyze the implications of the IFRS's mandatory adoption for the quality of banks' accounting information in 12 member states of the European Union. Specifically, they investigated how the application of IAS 39 affected banks' main operational accrual item: the provision for loan losses. The authors ascertain that the more rigid standards established by IAS 39 significantly reduce discretionary behavior, which was measured through the smoothing of profits. Furthermore, because financial reports' results are not shaped only by accounting standards, the authors note that the effect of adopting the IFRS is less clear in regimes with more rigorous supervision and in countries where banks' properties are more scattered.

In October 2008, at the height of the financial crisis, the IASB was under great political pressure and allowed financial companies to suspend the accounting of some financial assets using fair value, i.e., the IASB amended IAS 39 under political pressure. Given this fact, Bischof, Brüggemann and Daske (2010) examine the economic consequences of this change to IAS 39 in a comprehensive and global sample of open-capital banks that adopted the IFRS. Their results suggest that the reclassification option produces both intended and unintended consequences. In the short term, the amendment provided relief to most banks in difficulty, thus avoiding losses in fair value and reducing the regulatory costs of supervisory intervention. However, analysis of the long-term effects in the capital markets shows that the suspension of measuring by fair value led to a significant increase in information asymmetry, supporting claims that measuring financial assets' fair values provides useful information for capital markets.

Hammersley, Myers and Shakespeare (2008) examine market reactions related to the disclosure of deficiencies in internal control and the characteristics of those weaknesses relative to section 302 of the 2002 Sarbanes-Oxley Law, controlling in the event window for other material announcements. The authors ascertain that some characteristics related to weaknesses (i.e., severity of weakness, administrative conclusions on the efficacy of controls and auditing and imprecision in disclosures) are informative and that the contents of the disclosed information regarding internal weakness in control depend on the severity of the weakness. Furthermore, in a subsample uncontaminated by other announcements in the event window, negative reactions to the disclosure of internal control deficiencies and material weaknesses are observed in the prices.

Paananen, Renders and Shima (2012) investigate the determinants of banks' decisions to reclassify financial assets in the scope of the change to IAS 39 and the consequences of these reclassifications in the capital markets. The change in IAS 39 to which these authors refer is the same change studied by Bischof et al. (2010), previously described. The results of this study show that an adequate capital ratio, near the minimum requirement, is associated with banks' decisions to reclassify their financial assets. Furthermore, the authors find evidence that the level of exposure to measurement by fair value also increases the probability of reclassification. In the second part of the analysis, a difference-in-differences approach was used to test banks' market prices at the time of reclassification. Subsequently, the authors observe that investors eventually put less trust in net equity accounting value and profit after the banks' reclassification. However, before the change in IAS 39, the authors found no difference in market prices between the control group (banks that did not perform the reclassification) and the treatment group (banks that did perform the reclassification).

Just as Paananen et al. (2012) analyze the impact of an event on banks' market price, this study analyzes the impact of the IASB letter on banks using a methodology known as event study. According to MacKinlay (1997), an event study measures the impact of a specific event on a company's value, which can be applied in various studies. Some examples include events such as mergers and acquisitions, disclosure of results, issuance of new debt or net equity and announcements of macroeconomic variables (such as commercial deficits). William Schwert (1981), for example, has measured the impact of a change in the regulatory environment on companies' value.

Initially, to conduct an event study, one must define the event of interest and identify the period for which the stock prices of companies involved in the event are to be examined. The date of the event is defined as "date zero", and the period in which the involved companies' stock prices are to be examined is defined as the "event window". In practice, the event window is often expanded to several days, including at least the day of and the day after the announcement. This allows an analysis of the periods around the event and makes it possible to capture its effects on prices after the market closes on the day of the announcement. After identifying the event, it is necessary to determine the selection criteria to include a particular company in the study. The criteria may involve restrictions imposed by the availability of data, such as being listed in a given stock exchange, or other restrictions, such as belonging to a specific sector (Mackinlay, 1997).

Assessment of the event's impact requires some metric for the return, which can be defined as Ait = Rit – E(Rit|Xt), where Ait is the excess (or abnormal) return, Rit is the real return and E(Rit|Xt) is the expected return for company i in period t. Campbell, Lo and Mackinley (1997) and Brown and Warner (1985) list the three foremost methods to measure abnormal returns: mean-adjusted returns, market-adjusted returns and the market model.

3 METHODOLOGY

This study's goal is to analyze whether the IASB's letter to the ESMA had an impact on the stock returns of banks in Germany, Spain, France, Italy and the United Kingdom during periods following the letter's disclosure. An event study was conducted to this end, in which the event's date was the day that the letter was published, i.e., August 30, 2011.

Because the choice of how many days will be covered by the windows is arbitrary (Brown & Warner, 1985), this study defined 3 small windows in an attempt to capture whether the market noticed and reacted quickly to the news in the IASB letter. The following authors have also used small windows with significant results: Bhattacharya, Daouk, Jorgenson and Kehr (2000); Li and Ramesh (2009); Hammersley et al. (2008); Batistella, Corrar and Bergmann (2004); and Su and Lin (2012). The first window contained the first day (with quotation) before the event date and the first day (with quotation) after the event date. The second and third windows contained the 3 and 5 days before and after the event date (with quotation), respectively. The following figure provides a schematic of the 3 windows:
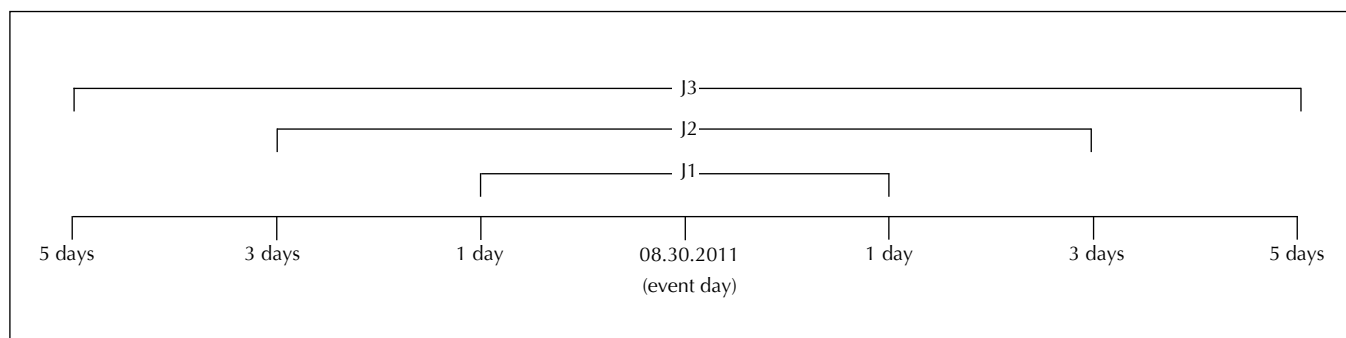

Figure 1 *Event windows, case 1*

As previously set forth, an assessment of the event's impact requires a metric for the return. This study used the market-adjusted return, defined as $AR_{it} = R_{it} - R_{mt}$ (Campbell, Lo & Mackinlay, 1997). Here, AR_{it} is the market-adjusted return of bank i in period t, R_{it} is the normal (real) return of bank i in period t and R_{mt} is the market return of index m in period t. The market-adjusted returns method was chosen because, according to Brown and Warner (1985), in the case of windows with short periods, simple risk adjustment is already very effective in detecting abnormal performance.

Continuous return was used to estimate normal returns. It was found using the natural logarithm of the quotient between the daily quotations of the previous period and those of the current period. This method was chosen because when the natural logarithm of the (P_{it}/P_{it-1}) ratio is taken, the curve representing the frequency distribution becomes symmetric (Soares, Rostano, & Soares, 2002). Returns were thus calculated as $R_{it} = In(P_{it}/P_{it-1})$, where P_{it} is the price of stock i on date t and P_{it-1} is the price of stock i on date t-1. Each country's primary stock exchange indices were used as proxies for market returns (R_{mt}) because these indices best represent local markets, as shown below in Table 1:

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	Table 1	Description of each country's stock market index

Country	Index	Composition
Germany	DAX	Thirty foremost German companies traded on the Frankfurt Stock Exchange.
Spain	IBEX 35	Thirty-five most-liquid stocks traded in the Bolsa de Madrid (Madrid Stock Exchange), a portfolio that is reviewed twice per year.
France	CAC 40	Forty largest and most-traded stocks on the NYSE Euronext Paris exchange.
Italy	FTSE MIB	Forty most-traded stocks on the Milan Exchange.
United Kingdom	FTSE 100	Stock of the 100 London Exchange-listed companies with the largest market capitalization. This is one of the most widely used indices of the market.

After calculating the normal and market returns, it was possible to obtain the returns adjusted by daily markets. However, because the event window normally consists of more than one day, it was necessary to aggregate the returns to enable global inferences about the studied event. The aggregation was performed by simply summing the daily marked-adjusted returns over each window, as shown in the following formula (where N is the number of days in the window and CAR is cumulative market-adjusted return):

$$CAR_{it}(\tau_1, \tau_N) = \sum_{\tau=1}^{N} AR_{i\tau}$$ **1**

To assess the impact that the IASB letter may have had on the selected banks' stock return, the differences-in-differences methodology described by Angrist and Krueger (1999) was used. In the simplest case of this methodology's application, there are 2 periods of time, t_1 and t_2, and 2 groups for comparison, a treatment group and a control group. In this study, the treatment group was composed of the banks that had Greek bonds in their portfolios, and the control group was composed of those that did not. The 2 periods of time are those before and after the IASB letter.

In addition to the difference-in-differences methodology, control variables selected from previous studies were added to the model. With these variables, the model for answering this study's question was represented by the following equation 2:

$$CAR_{it}=\alpha_0+\alpha_1 dtime_t+\alpha_2 dsecurity_i+\alpha_3 dtxs_{it}+\alpha_4 big4_i$$
$$+\alpha_5 TA_i+\alpha_6 turnover_{it}+\alpha_7 dGR_i+\alpha_8 dFR_i+\alpha_9 dIT_i$$
$$+\alpha_{10} dUK_i+e_{it}$$ **2**

	Table 2	Description of the variables in the cumulative market-adjusted return model (CAR)

Variable	Description	
CAR_{it}	Cumulative market-adjusted return of bank i before and after the event date.	
$dtime_t$	Dummy that indicates whether the CAR observed for bank i occurred before or after the event date,	0 if observed before the event date and 1 if observed after the event date.
$dsecurity_i$	Dummy that indicates whether bank i had Greek bonds in its portfolio during the period being analyzed,	0 if the bank did not own Greek securities and 1 if the bank owned Greek securities.
$dtxs_{it}$	Dummy that represents the difference-in-differences analysis ($dtxs_{it} = dtime_i \times dsecurity_i$).	
big4	Dummy that indicates whether bank i has been audited by one of the largest auditing companies,	0 if it has not been audited by one of the Big 4 and 1 if it has been audited by one of the Big 4.
TA	Natural logarithm of bank i's total assets, referring to the year 2011.	
turnover	Dummy that represents the monthly volume of trade, where August is the month before and September the month after the event,	0 if the monthly volume of bank i is below the monthly average over all banks and 1 otherwise.
dGR_i	Dummy indicating the country of bank i, where	1, German bank and 0, otherwise.
dFR_i	Dummy indicating the country of bank i, where	1, French bank and 0, otherwise.
dIT_i	Dummy indicating the country of bank i, where	1, Italian bank and 0, otherwise.
dUK_i	Dummy indicating the country of bank i, where	1, United Kingdom bank and 0, otherwise.
e_{it}	Value of the standard error for bank i during the period of analysis.	

The time dummy captures factors coinciding in time that affected returns (CAR) in the same way for both groups, and the security dummy captures possible differences between the control and treatment groups before the event date. The coefficient of interest in this study is α3, which captures the effect of the interaction between the time after the event date and the treatment group (the product $dtime_t$ x $dsecurity_i$, i.e., the $dtxs_{it}$ dummy equals 1 only for the treatment group at the time after the letter was issued). In this way, it is hoped that α_3 is negative and significant to a given level of confidence because that is evidence that the IASB letter had a negative impact on the return of banks owning Greek bonds during this period.

The dummy that refers to the four largest auditing companies (Big Four) is often used in finance and accounting studies, such as Hammersley et al. (2008), Armstrong et al. (2010) and Fiechter (2011), among others. It is hoped that this variable will show a positive relation to stock return. The sample contains 83 banks audited by one of the Big Four and 45 audited by other companies.

The variable referring to the stock volume traded during the month (turnover) has been used by Armstrong et al. (2010) in describing that companies with low traded volume tend to have greater information asymmetry. Because the dummy variable's value is 0 when the bank's monthly volume is below the monthly average of the other banks and 1 otherwise, it is expected that its coefficient will display a positive relation to stock return. Finally, the variable total assets (TA) has been inserted into the model as a control for bank size, and the dummies for each country (dGR, dFR, dIT, dUK) control characteristics common to each country.

The method used to estimate this model was also the OLS, using pooled data because the set of banks analyzed before and after the event date does not change. With respect to the method, it is not possible to estimate this model using fixed effects because there are 6 variables that remain fixed along time: dsecurity, big4, TA and the country dummies. In other words, those variables' values did not change after the date that the letter was issued and, as a consequence, were omitted when estimating by fixed effect. With respect to random effect, it was necessary to compare the estimates via OLS and random effect by means of the Breusch-Pagan Lagrange Multiplier test, which allowed testing of the statistical significance of each bank's specific effects based on the estimates obtained through random effect. That test's result does not reject H₀ at the 1% level for all specifications, suggesting that the OLS model is more adequate than the random effect model.

When estimating the model using OLS, the Breusch-Pagan test for heteroscedasticity was performed. It is observed that at the 1% level, the test rejects H₀, suggesting that the errors are heteroscedastic. In this way, the final model was estimated with a robust variance-covariance matrix that corrects for heteroscedasticity. In addition, the variance inflation factor (VIF) test for multicollinearity was performed, which showed that the independent variables are not linearly related.

Regarding the database used in this study, banks listed in the stock exchanges of Germany, Spain, France, Italy and the United Kingdom were chosen according to their ratings in the Bankscope® database (Bureau van Dijk, Brussels, Belgium). The choice of countries is attributable to those countries having the largest economies in Europe. Initially, 132 banks were selected via Bankscope®, and next, an analysis of each bank's annual report was conducted to ascertain whether the bank owned Greek bonds in 2011. Reports were obtained from each bank's official website. Finally, the daily quotations were gathered: at that point, it was discovered that 4 banks did not have the information for the days analyzed in this study. In the end, the sample consisted of 128 banks, as shown in Table 3 below:

| **Table 3** | *Summary of banks* |

Country in which the bank has its headquarters and trades stock	Banks with and without Greek bonds		
	Without bonds	With bonds	Total
Germany	18	6	24
Spain	5	4	9
France	26	6	32
Italy	17	9	26
United Kingdom	34	3	37
Total	**100**	**28**	**128**

4 RESULTS

4.1 Mean Difference Tests

All analyses and regressions were performed for each of the 3 previously defined event windows. Initially, mean differences tests between the treatment group (banks that owned Greek bonds) and the control group (banks that did not own Greek bonds) were performed, taking into account data from before and after the event date. These tests aimed to identify whether the IASB letter had an impact, on average, on the returns of banks that owned Greek securities compared to banks that did not. The mean values and standard deviations of each group for each type of analysis are given in Table 4, along with the t-test and respective p-value.

Table 4   *Mean difference test between control and treatment groups*

		Mean	Standard deviation	T	P>|t|
Cumulative adjusted return (-1 +1)					
Before the event	without bond	-0.01278	0.00178	-0.6153	0.5395
	with bond	-0.01037	0.00378		
After the event	without bond	-0.01725	0.00287	-0.7265	0.4689
	with bond	-0.01307	0.00357		
Cumulative adjusted return (-3 +3)					
Before the event	without bond	0.00627	0.00257	-1.0128	0.3131
	with bond	0.01208	0.00577		
After the event	without bond	0.00446	0.00278	2.1134	0.0365**
	with bond	-0.00756	0.00410		
Cumulative adjusted return (-5 +5)					
Before the event	without bond	-0.01234	0.00540	-0.1049	0.9167
	with bond	-0.01122	0.00572		
After the event	without bond	0.02193	0.00489	3.4703	0.0007***
	with bond	-0.01499	0.00998		

***, **, * significant at the 1%, 5% and 10% levels, respectively

One can observe that for the models that contained 3 and 5 days, the difference between the means of the 2 groups was significant and, on average, banks with Greek bonds had lower returns than those without. In other words, after the IASB letter was disclosed, banks owning Greek bonds had lower returns than banks without those securities in their portfolios.

Next, another mean difference test was conducted, but the test focused on the periods before and after the event date, once again splitting the sample into treatment and control groups. This time, the tests were conducted to attempt to identify whether the fact of a bank having Greek bonds in its portfolio had an impact, on average, on its stock's return. Table 5 gives the mean values and standard deviations for each group and each type of analysis, along with the t-test and the respective p-value.

Table 5   *Mean difference test between periods*

		Mean	Standard deviation	T	P>|t|
Cumulative adjusted return (-1 +1)					
Without bond	Before the event	-0.01278	0.00178	1.3246	0.1868
	After the event	-0.01725	0.00287		
With bond	Before the event	-0.01037	0.00378	0.5186	0.6061
	After the event	-0.01307	0.00357		
Cumulative adjusted return (-3 +3)					
Without bond	Before the event	0.00627	0.00257	0.4777	0.6334
	After the event	0.00446	0.00278		
With bond	Before the event	0.01208	0.00577	2.7710	0.0076***
	After the event	-0.00756	0.00410		
Cumulative adjusted return (-5 +5)					
Without bond	Before the event	-0.01234	0.00540	-4.7019	0.0000***
	After the event	0.02193	0.00489		
With bond	Before the event	-0.01122	0.00572	0.3281	0.7441
	After the event	-0.01499	0.00998		

***, **, * significant at the 1%, 5% and 10% levels, respectively

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In accordance with the previously obtained results, the test performed on the 3-day window (J2) is significant at the 1% confidence level, and the return after the event date was lower than the return calculated before the event. This indicates that the returns of banks owning Greek bonds dropped after the IASB letter was disclosed.

Therefore, because there is a difference between the mean values of the groups of banks with and without Greek bonds, and there is a difference in those values before and after the event date for the group that owned Greek bonds, one can conclude that there is evidence that Greek bonds had an impact, on average, on the return of the banks that owned them.

4.2 Results of the Regression Model

To conduct a more detailed analysis, equation 1 was estimated using OLS for each event window. The results of each regression are presented in Tables 6, 7 and 8. Table 6 gives the results for the first event window J1. One notices that only the dummies for size (TA) and for the United Kingdom's banks (dUK) are significant at 1% and 5%, respectively. It is also noteworthy, in this first window, that the coefficient of the dummy of interest in this study, $\alpha 3$ (dtxs), is positive but not significant. Therefore, there is no evidence that the IASB letter had an impact on banks' returns in the day following its disclosure because the positive coefficient indicates that the banks' returns increased the day after the letter was disclosed. These results are in conformity with the mean difference tests, which are not significant for this event window.

Table 6	Regression results—J1 (-1 +1)		
Variables	**Coef.**	**Robust std. err.**	**t**	**P>|t|**
dtime	-0.0044086	0.0032347	-1.36	0.174
dsecurity	-0.0045027	0.0054757	-0.82	0.412
dtxs	0.0017082	0.006014	0.28	0.777
big4	-0.0025509	0.0035353	-0.72	0.471
TA	0.0020737	0.0006934	2.99	0.003***
turnover	0.0033408	0.0045692	0.73	0.465
dGR	0.0036801	0.0051145	0.72	0.472
dFR	-0.0002559	0.0040573	-0.06	0.950
dIT	-0.0034322	0.0042193	-0.81	0.417
dUK	0.0126763	0.0050136	2.53	0.012**
Cons	-0.0457703	0.0110563	-4.14	0.000

R-squared   0.1131
***, **,* significant at the 1%, 5% and 10% levels, respectively

When the regression was performed in the second event window J2 (-3 +3), the coefficient of the dummy for the interaction between the time and security dummies (dtxs) is significant at 5% confidence and negative, i.e., the null hypothesis that the IASB letter had no impact on the return of banks that owned Greek bonds is rejected. This indicates that after the letter was disclosed, banks owning Greek bonds had lower returns than banks that did not own these securities. Therefore, there is evidence that the market captured the information that some banks were accounting for Greek bonds in a manner inconsistent with the IAS 39 standard and reacted to that fact. This result corroborates the findings in the mean difference test for this window. The results for this regression are given below in Table 7:

Table 7	Regression results—J2 (-3 +3)		
Variables	**Coef.**	**Robust std. err.**	**T**	**P>|t|**
dtime	-0.0014918	0.0036421	-0.41	0.682
dsecurity	-0.0016627	0.0070021	-0.24	0.812
dtxs	-0.018157	0.0077602	-2.34	0.020**
big4	-0.0032661	0.0038797	-0.84	0.401
TA	0.0008113	0.0007916	1.02	0.306
turnover	0.0158659	0.0061378	2.58	0.010***
dGR	0.0230411	0.0065022	3.54	0.000***
dFR	0.0079976	0.0054388	1.47	0.143
dIT	-0.0001466	0.0061221	-0.02	0.981
dUK	0.0107773	0.0061492	1.75	0.081*
Cons	-0.0140483	0.0136445	-1.03	0.304

R-squared   0.1252
***, **,* significant at the 1%, 5% and 10% levels, respectively

Finally, the regression using the event window J3 (-5 +5) was performed, and its results are shown in Table 8. As with window J2, the results for this window indicate that the market captured the information contained in the IASB letter and reacted to that information because the interaction variable's (dtxs) coefficient is significant at 1% and negative. Furthermore, the coefficient of the time dummy is significant at 1% and positive, indicating that returns, on average, increased in the 5 days following the event date. This result also corroborates the findings of the mean difference tests for this window.

Table 8   *Regression results—J3 (-5 +5)*

Variables	Coef.	Robust std. err.	T	P>|t|
dtime	0.0341242	0.0072128	4.73	0.000***
dsecurity	0.0062802	0.0100869	0.62	0.534
dtxs	-0.0378989	0.0131301	-2.89	0.004***
big4	-0.0108649	0.0072417	-1.50	0.135
TA	-0.0002235	0.0016347	-0.14	0.891
turnover	-0.0076094	0.0115529	-0.66	0.511
dGR	0.0113711	0.0116254	0.98	0.329
dFR	0.0033393	0.0082299	0.41	0.685
dIT	-0.0103624	0.0086564	-1.20	0.232
dUK	-0.0142869	0.0091966	-1.55	0.122
Cons	0.0013123	0.0277075	0.05	0.962

R-squared   0.1561
***, **,* significant at the 1%, 5% and 10% levels, respectively

In light of the previously described results, it is possible to reject the null hypothesis that the IASB letter had no impact on the return of banks that owned Greek bonds, i.e., there is statistical evidence that the standard-setter's opinion is relevant because the IASB letter had an impact on the return of banks that owned Greek bonds during the period of analysis. In addition, tests were also conducted using windows of 7 days before and after the event, but their results are not significant. This indicates that the impact of the IASB letter on the financial market did not extend over a long period of time and also did not have an immediate impact on the market because the results for window J1 are not significant.

Because the IASB letter addressed to the ESMA was dated August 4, 2011, and its public disclosure did not occur until August 30, 2011, another aim of this study is to analyze whether the market obtained this information on a date near the date on which the IASB letter was sent to the ESMA. To this end, a second event study was conducted using the same group of banks, in which the event date was set to August 4, 2011. In addition, 3 distinct event windows of 1, 3 and 5 days before and after the event date were analyzed. The following figure depicts a schematic of the windows employed:
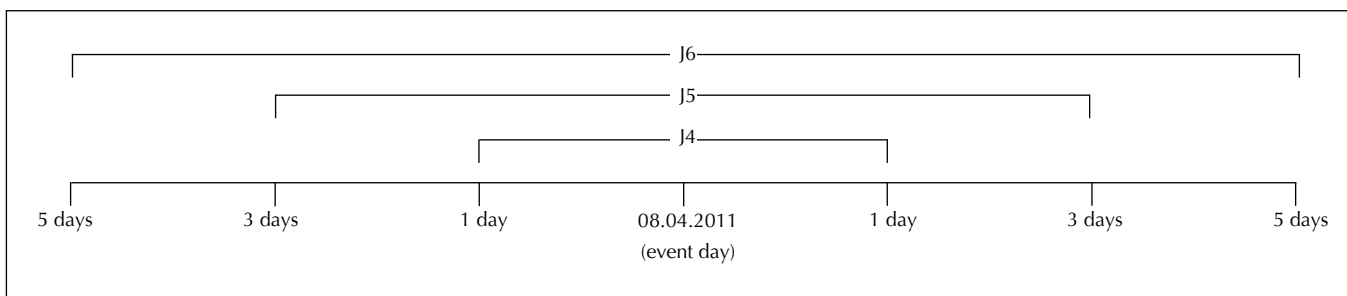
Figure 2   *Event windows, case 2*

This model of the second study is equal to that of the first study, and therefore, regressions were also estimated using the OLS method with pooled data, and the same tests were carried out. The model was estimated using a robust variance-covariance matrix that corrected for heteroscedasticity and autocorrelation. The test for multicollinearity shows that the independent variables are not linearly related.

The results obtained for each regression are given below for each event window in Tables 9, 10 and 11. The results for event window J4, given in Table 9, show that no coefficient is significant. This suggests that there is no indication that the market had, on that date, the information contained in the letter.

Table 9   *Regression result—J4 (-1 +1)*

Variables	Coef.	Robust std. err.	t	P>|t|
dtime	-0.0052061	0.0038912	-1.34	0.182
dsecurity	-0.0068921	0.006175	-1.12	0.265
dtxs	0.0079421	0.0091763	0.87	0.388
big4	0.0009576	0.0040256	0.24	0.812
TA	0.0009043	0.0010628	0.85	0.396
turnover	-0.007307	0.0067881	-1.08	0.283
dGR	0.0056281	0.0091477	0.62	0.539
dFR	0.0021152	0.0068821	0.31	0.759
dIT	-0.0023844	0.0064819	-0.37	0.713
dUK	0.0011427	0.0064177	0.18	0.859
Cons	-0.0113748	0.0182028	-0.62	0.533

R-squared   0.0235
***, **,* significant at the 1%, 5% and 10% levels, respectively

The results did not change much when we analyzed the second event window (J5). The differences are that the coefficients for the time and security dummies become significant at the 10% level, indicating that banks that owned Greek bonds had lower returns than those that did not. However, it is not possible to infer from this whether the market did or did not have knowledge of the information contained in the IASB letter.

Table 10   *Regression result—J5 (-3 +3)*

Variable	Coef.	Robust std. err.	t	P>|t|
dtime	-0.0117048	0.0061864	-1.89	0.060*
dsecurity	-0.0189493	0.0101201	-1.87	0.062*
dtxs	0.017308	0.0125786	1.38	0.170
big4	0.0048892	0.0062118	0.79	0.432
TA	-0.0026514	0.0015367	-1.73	0.086*
turnover	-0.0046376	0.0098913	-0.47	0.640
dGR	0.0248779	0.0143932	1.73	0.085
dFR	0.0004342	0.0122366	0.04	0.972
dIT	-0.0001692	0.01243	-0.01	0.989
dUK	-0.019852	0.0123061	-1.61	0.108
Cons	0.0570889	0.0269688	2.12	0.035

R-squared   0.1770
***, **,* significant at the 1%, 5% and 10% levels, respectively

Finally, a regression using the event window J6 was conducted, and its results are presented in Table 11. It is noticeable that the coefficient of the interaction dummy (dtxs) is significant at 10% confidence and negative, i.e., there is a small amount of evidence that the market had the information in the letter 5 days after it was sent.

Table 11   *Regression result—J6 (-5 +5)*

Variables	Coef.	Robust std. err.	t	P>|t|
dtime	0.0038762	0.0074995	0.52	0.606
dsecurity	0.0013618	0.0111089	0.12	0.903
dtxs	-0.0266194	0.0157642	-1.69	0.093*
big4	0.0009854	0.00746	0.13	0.895
TA	-0.0034129	0.0018368	-1.86	0.064*
turnover	-0.0186697	0.0115616	-1.61	0.108
dGR	0.0250415	0.0145787	1.72	0.087*
dFR	0.0013692	0.0118463	0.12	0.908
dIT	-0.0115934	0.011773	-0.98	0.326
dUK	-0.0296657	0.011816	-2.51	0.013**
Cons	0.0761144	0.0322897	2.36	0.019

R-squared   0.2213
***, **,* significant at the 1%, 5% and 10% levels, respectively

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