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# Refinancing and shareholder value: covered bond issuances between 2007 and 2010

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This paper deals with an event study assessing the influence of covered bond issuance on European banks' share prices. Covered bonds are debt securities backed by mortgages. In contrast to CDOs, mortgages remain on the issuer's consolidated balance sheet. We show that covered bond issuances have a positive influence on issuers' share prices with a three days' delay. So, the stock market reacts not to the issuance announcement but to the success of the issuance<sup>2</sup>.

Keywords: covered bonds, issuance, event study, subprime mortgage crisis

The subprime mortgage crisis caused refinancing difficulties and increased the financial institutions' credit risk. In response to these difficulties, the banking sector used a wide variety of financial solutions aimed at refinancing or strengthening equity. A number of financial securities regained interest in the eyes of investors. The number of covered bonds issuances leapt up. So, the aim of this paper is to assess the influence of these issuances on the share prices of European financial sector during the 2007-2010 period.

In the first part, we present covered bonds and explain their attractiveness according to the pecking order theory, within the context of restricted market liquidity owing to a high level of risk aversion. We also present the methodological choices of the event study. In the second part of this paper, we present the results and our comments.

## I. Covered bonds: definition and theoretical point of view

From 2007 on, covered bonds regained attractiveness on the financial markets (ECBC, 2010).

### 1. What are covered bonds?

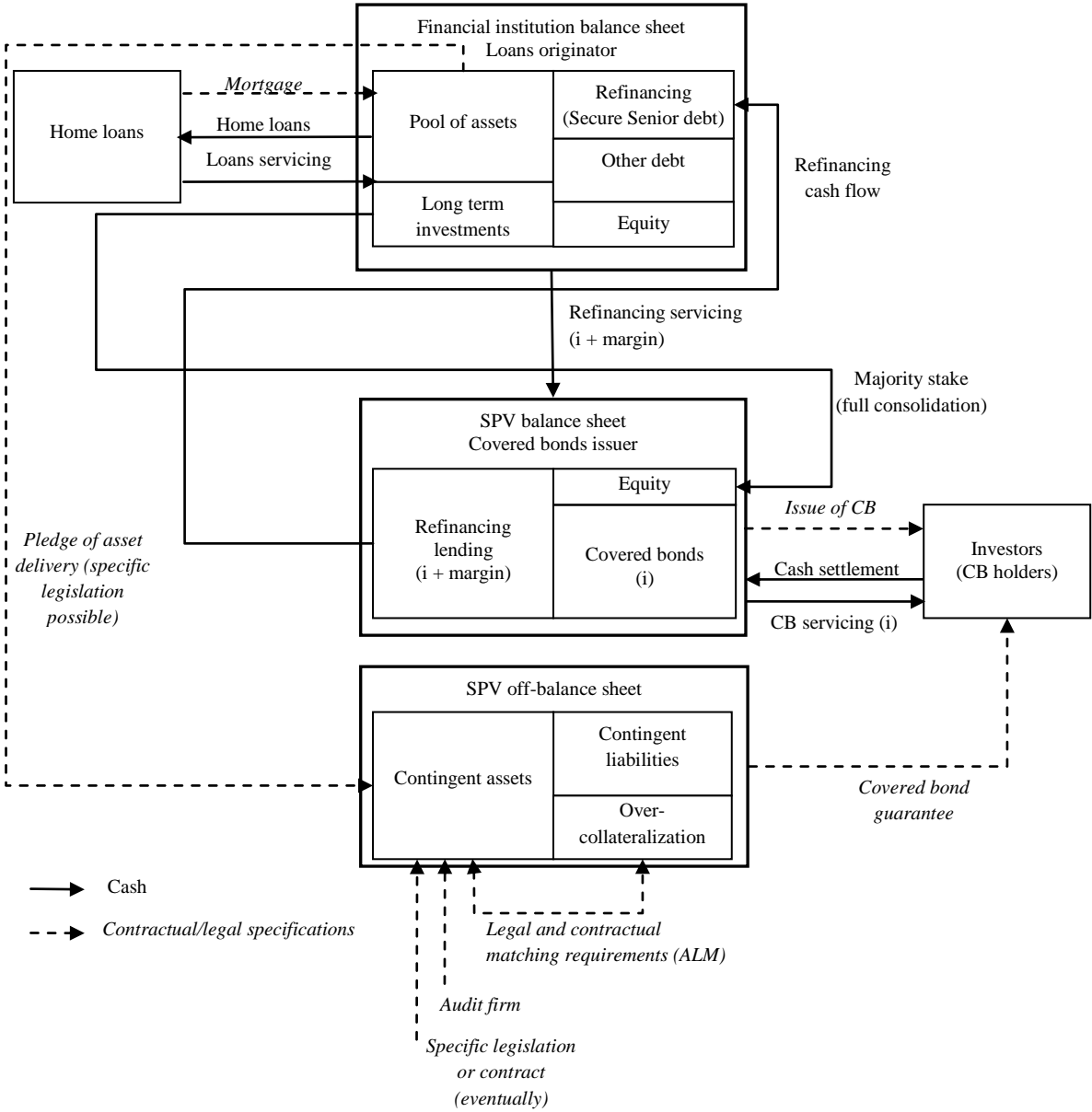
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Covered bonds are senior debt securities generally issued by European financial institutions. These low-risk securities are often rated AAA. On the one hand, they are typical of senior debt: in the event of default, investors have priority over the subordinated debt securities holders. On the other hand, covered bonds are backed by a cover pool. In the event of default, investors have priority over these assets. The mechanism therefore delivers double recourse: a recourse against the issuer and a recourse against the underlying assets. The pledge to deliver the assets can be contractual in the case of structured covered bonds or legal in the case of regulated covered bonds. The following diagram presents the financial mechanism of covered bonds.

**Mechanism of covered bonds**



To issue covered bonds, banks need to hold high-quality assets as cover. This cover has two objectives: the first is the refinancing of mortgages; the second is value creation for stockholders by minimising the cost of capital, as the cover allows for a reduction of the risk premium.

Covered bonds are often compared to deconsolidating financial securities such as CDOs (ECB, 2008). Indeed, CDOs and covered bonds are similar in many ways: both of them are backed by mortgages and both of them are bonds with enhancement. The table below compares covered bonds to CDOs.

|                            | Covered bonds   | CDOs   |
|----------------------------|---|--|
| Structure                  | Mortgages are isolated on the balance sheet (non-deconsolidation of assets) | Sales of mortgages to an SPV (deconsolidation of assets) |
| Securities issuer          | Originating financial institutions  | SPV  |
| Debt servicing             | Operating activities of the issuer  | Assets held by the SPV                                   |
| Credit risk                | Supported by the issuer   | Supported by the creditors of the SPV                    |
| Underlying risk            | Mortgage and public sector loans  | Mortgage   |
| Recourse to the originator | Yes   | No   |
| Eligibility of assets      | Defined by law or contract  | Defined by contract                                      |
| Quality of assets          | High quality  | Variable quality ( <i>in fine</i> )                      |
| Asset management           | Dynamic   | Static   |
| Tranches                   | Homogenous  | Several tranches   |
| Credit enhancement         | Yes   | Yes  |

Table 1: Comparison of covered bonds and CDOs

There are many differences between covered bonds and CDOs. The first difference relates to debt servicing. In the case of covered bonds, debt servicing is paid by operating activities of the issuer. For CDOs, debt servicing is paid by the mortgages. The cover pool that secures the bond is only activated in the event of default. The second difference relates to the quality of the cover. Covered bonds guarantees are composed of a pool of high-quality debts. These are home loans and public sector loans. The cover pool is dynamically managed by the issuer during the entire maturity of the covered bonds. The objective is to always maintain the quality of the cover, which is regularly monitored by external auditors. Therefore, in the case of default event, the issuer must make up the value of the cover pool. A third difference is that cover pool remains on the issuer’s balance sheet. A dedicated subsidiary is responsible for holding the cover pool. So, in contrast to securitisation, the issuer, as the originator, must monitor its loan offer as the credit risk remains on its balance sheet (Loutschina and Strahan, 2009). Covered bonds do not therefore enable the originator to offload the credit risk on the financial markets. A fourth difference is the simplicity of the subsidiary’s balance sheet. The liabilities are made up of equity capital stemming almost exclusively from the financial institution from which the mortgage debt and covered bonds originate. Thus the banking group has an exclusive control over the subsidiary. The mortgages are homogenous, made up of real estate loans provided as cover. The estimation of the level of risk is easier. So, covered bonds are low-risk debt for investors and low-cost for issuers.

2. The reasons for issuing covered bonds

The literature on corporate finance presents various competing and complementary theories that aim to describe or explain capital structure and its consequences on the value of firms. Several variables providing explanations for the choice of financing are proposed: cost of capital, bankruptcy costs of debt and tax. The options model (Black and Scholes, 1973) has limited explanatory power here. The difficulty is due to covered bonds being low-risk whereas the options theory is interesting to explain debt-equity choice on risky projects. For the same reason and because it assumes information symmetry between managers and investors, the static trade-off theory (Kraus and Litzenberger, 1973) is not used either. However, the pecking order theory (Myers and Majluf, 1984) can be enlightening. The choice of capital structure is widely determined by the cost of capital: minimising the weighted average cost of capital is equivalent to maximising the market value of the firm (Modigliani and Miller, 1958). Thus managers choose financial solutions considering the cost. Internal financing both relies on cash flow retention and dividend adjustment. External financing is low-risk debt, high-risk debt and capital increase. Covered bonds are therefore a low-risk debt and issuance of covered bonds is an external financing.

Baker and Wurgler (2002) present a dynamic version of the pecking order theory. The manager takes a marginalist approach, in which the amount of unused debt capacity is a key variable in financing choice. In effect, the choices are dependent on previous decisions. The director proceeds using the trial-and-error method in order to approach a capital structure that is satisfactory, but does not aim to be optimal. He therefore behaves in an opportunistic fashion which optimises the next decision, taking into account the inertia of the capital structure owing to past decisions on the one hand and market conditions on the other: the *“capital structure evolves as the cumulative outcome of past attempts to time the equity market”*. The notion of the *market timing* of the capital structure is highlighted here. What makes this approach interesting is the fact that corporations pay attention to market conditions in the choice of financing, even if some authors in the past have already underlined that corporations tend to increase their capital when shares are at their highest and repurchase the shares when shares are at their lowest. The interest and success of covered bonds between 2007 and 2010 can therefore be explained by the fact that it is consistent with the market conditions marked by low prices for banking sector shares, an increase in the risk premium for senior debt and restricted liquidity.

The signalling theory (Ross, 1977; Leland and Pyle, 1977) is complementary to the pecking order theory. Starting from the assumption that there are informational asymmetries between directors and investors, external financing is a signal, i.e. it conveys information about the firm. This signal reduces the informational asymmetries. It can be recognised through positive or negative market reactions on the prices of listed shares. It is therefore necessary to define the nature of the signal which could be an issuance of covered bonds. Indeed, on the assets side, the covered bonds are backed by high-quality assets. It is therefore not possible to achieve unless the financial institution distributes a significant amount of mortgages which are used as cover. The issuance of covered bonds can thus signal commercial success in the granting of mortgages, which are particularly attractive owing to the quality of European mortgages and to the duration of the relationship with the property-buying households.

Moreover, on the liabilities side, the mechanisms at work are both more numerous and more complex. It is necessary to distinguish between debt and cover, refinancing and value creation. The announcement of a debt issuance is generally defined as a positive signal on the share price. However, this impact is only positive if the debt leads to an increase in the leverage ratio (Ross, 1977; Jensen, 1986). Yet, the issuance has no effect on the value of equity if it is used to refinance a debt with the same characteristics. Conversely, if it is used to refinance a debt with different conditions, the operation may constitute a signal for investors. While the cover enables lower-cost refinancing, the issuance of covered bonds is a positive signal if the bonds are substituted for a more risky and consequently more costly senior debt. The issuance can create value for shareholders by minimising the average weighted cost of capital. Similarly, since the servicing of the securitised debt is carried out as part of the mortgage originator's operating activity, the non-deconsolidation of the assets in the balance sheet is a kind of disciplinary mechanism which forces the director to pursue equity and debt holders' interests (Jensen, 1986). The impact of covered bonds issuance may then appear on the stock market. Finally, faced with fears about the solvency of enterprises in the banking sector, the managers inform investors of an unused debt capacity, as the firm is still able to provide a cover with high-quality assets. The managers are reluctant to issue shares because they consider that shares are underpriced by the market, since the period is marked by very low share prices.

Consequently, this paper tests two hypotheses:

- H0: the announcement of an issuance of covered bonds is a significant signal on the share price;
  - H0a: the announcement of an issuance of covered bonds is a positive signal;
  - H0b : the announcement of an issuance of covered bonds is a negative signal;
- H1: the announcement of an issuance of covered bonds is not a significant signal on the share price.

These hypotheses are tested using the event study methodology.

### 3. The event study

An event study is consistent with the efficient market hypothesis whereby new information on the financial markets explains share price variations. Fama (1970) distinguishes between three forms of market efficiency depending on the definition of the information. Semi-strong efficiency assumes that prices reflect all publicly available information. This efficiency is tested by the event study methodology (Fama, Fisher, Jensen et Roll, 1969), which is used to assess the market's reaction to an announcement. The impact is estimated by computing an abnormal return, which is the difference between the return at the date of the event or during a close period (event window) and an expected return. The literature presents many models, data reprocessing and statistical tests (Binder, 1998). Therefore, there is no consensus on the methodological choices. Moreover, these problems are sometimes deemed to be minor (Brown and Warner, 1985).

a. The market model

The market model (Sharpe, 1963) computes expected returns. So, it defines the daily return  $R_{i,t}$  on share  $i$  at date  $t$  using the daily return  $R_{m,t}$  on a market index  $m$  at date  $t$ . Thus, for the return on share  $i$  at date  $t$ , the market model is:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

where  $\beta_i = \frac{Cov(R_i; R_m)}{\sigma_m^2}$  and  $\alpha_i = R_{i,t} - \beta_i R_{m,t}$

where  $E(\varepsilon_{i,t}) = 0$ ,  $var(\varepsilon_{i,t}) = \varepsilon_\varepsilon^2$  and  $cov(\varepsilon_t; \varepsilon_{t+1}) = 0 \forall t \neq t+1$

The parameters  $\alpha_i$  and  $\beta_i$  are computed by the OLS method.  $\beta_i$  is an estimate of the sensitivity of asset  $i$  to market return.  $\alpha_i$  is an estimate of the asset return when market return is equal to zero. The estimation period can vary depending on the authors. Our study uses two short estimate periods of 75 and 150 days in order to better define the context of the market surrounding covered bond issuances.

The event study on daily data may be sensitive to non-synchronous trading. It is therefore necessary to adjust  $\beta_i$  values for the shares with a restricted liquidity. The  $\beta_i$  is replaced by the Scholes and William procedure (1977):

$$\beta_i' = \frac{\beta_i^- + \beta_i + \beta_i^+}{1 + 2\rho_m}$$

Where  $\beta_i^- = \frac{Cov(R_{i,t}, R_{m,t-1})}{\sigma(R_{m,t})\sigma(R_{m,t-1})}$ ,  $\beta_i^+ = \frac{Cov(R_{i,t}, R_{m,t+1})}{\sigma(R_{m,t})\sigma(R_{m,t+1})}$  and  $\rho_m$ , the first order autocorrelation of the index.

The market model is one of the most popular models in finance. Indeed, it presents many advantages. It is simple, not costly and simple in contrast to other, more complex econometric models. It also demonstrates a robustness because the model is adjusted for market and risk via the  $\beta_i$  and because  $\alpha_i$  can absorb external shock (Warner and Brown, 1980). Nevertheless, the market model is subject to Roll's critique (1977): the true market portfolio is not observable so the results are not independent of the choice of market index. To compensate for this problem, this event study uses three market indices. The Dow Jones Euro Stoxx Bank (DJES Bank) is a sector index, made up of the shares of 30 to 40 European financial institutions. The FTSE Euro First 300 (FTSE300) and Dow Jones Stoxx 600 (DJS 600) are multi-sector indices, made up respectively of 300 and 600 company shares listed in euro.

The abnormal return (AR) of share  $i$  in each period  $t$  of the event window is the difference between the observed return ( $R_{i,t}$ ) and the expected return ( $R_{i,t}^*$ ) computed by the market model:

$$AR_{i,t} = R_{i,t} - R_{i,t}^* = R_{i,t} - R_{i,t} | R_{m,t}$$

The abnormal returns are standardised. This processing is designed to reduce the effect of the non-stationary of daily variance, which can lead to too many rejections of the null hypothesis (Boehmer *et al.*, 1991). For the estimation periods of 75 and 150 days the standardised abnormal return (SAR) at date  $t$  is:

$$SAR_{i,t} = \frac{AR_{i,t}}{S(A_i)}$$

where  $S(A_i) = \sqrt{\frac{1}{74} \sum_{t=-81}^{-7} RA_{i,t}^2}$  and  $S(A_i) = \sqrt{\frac{1}{149} \sum_{t=-156}^{-7} RA_{i,t}^2}$

For  $n$  announcements of issuances of covered bonds at date  $t$  of the event window, the study computes a series of abnormal returns. The average standard abnormal return (ASAR) is then:

$$ASAR_t = \frac{1}{n} \sum_{i=1}^n SAR_{i,t} \text{ with } t \in [-6; +6]$$

If the issuance of covered bonds is unanticipated by the market and conveys information about the issuers, the ASAR is significantly different to zero. On the other hand, if the issuance conveys no information, the excess returns are normally distributed measurement errors.

$\alpha_i$  and  $\beta_i$  are computed on two estimation 75 days (-81; -7) and 150 days (-156; -7) periods. These estimation periods are intentionally short in order to reduce the instability of the parameters which are approximations of the true values  $\hat{\alpha}$  and  $\hat{\beta}$ . Moreover, the choice of a short event period of 13 days (-6; +6) is consistent with the semi-strong market efficiency hypothesis whereby the market is efficient when it reacts quickly.

#### b. Data

Data are obtained from the Six Telekurs. Daily returns are more consistent with the semi-strong efficiency hypothesis than weekly data or monthly data (Brown and Warner, 1985). The event date is the date of the official announcement of the issuance.

The table below collates the 72 events selected from the 577 recorded by a broker between December 2006 and July 2010. 505 events were eliminated for different reasons: lack of data,



unlisted shares, multiple issuances in quick succession, absence of issuer's shares in the indices etc.

### Data sample

| Regression       | 75 days   |        |         | 150 days  |        |         |
|------------------|-----------|--------|---------|-----------|--------|---------|
|                  | DJES bank | DJS600 | FTSE300 | DJES bank | DJS600 | FTSE300 |
| # issues         | 66        | 72     | 50      | 47        | 49     | 38      |
| # issuers        | 28        | 30     | 22      | 27        | 29     | 24      |
| # countries      | 10        | 10     | 8       | 10        | 10     | 9       |
| Issues vol. (M€) | 85 250    | 93 500 | 68 500  | 61 750    | 63 500 | 51 250  |

To avoid survivorship bias, the sample does not exclude those companies which have gone bankrupt. The first reason is a methodological one. Considering the financial context between 2007 and 2010 when several issuers underwent several financial difficulties, it is important not to create a measurement error whereby the signal would be linked only to firms having survived the difficulties. The second reason is a financial one. Covered bonds are particular because, in the event of default, the debt remains payable. The issuer thus delivers the assets used as cover to ensure debt service until maturity. Finally, this research only considers “jumbo” public issuances, for which the amount is superior or equal to one billion euros. These issuances serve as a reference and are therefore more likely to form a signal. All issuances are in euro, carried out by issuers listed in the eurozone.

#### c. Statistical tests

Using several statistical tests is the best way to detect abnormal returns (Brown and Warner, 1980). So, to test abnormal returns, the study uses two statistical tests. The Student test  $t$  is a parametric test for the equality of the means. It assumes that abnormal returns are normally distributed. The Wilcoxon signed rank test is a non-parametric test on the distribution symmetry of two independent samples. If the markets do not react to the announcement, the abnormal returns are measurement errors and their distribution is closed to normal distribution. The non-parametric test is less restrictive on the hypotheses of data tested, notably on the normal distribution of the ASARs, but it is subject to misspecification (Brown and Warner, 1980; 1985).

## II. Results and comments

This part presents the main results of the study and an analysis focused on the pecking order theory.

### 1. Results

The processing of the data uses SPSS19 software. The tables that follow present the results of the tests on each series of abnormal returns. 322 regressions and 156 tests were completed.

**Student test on the ASAR (estimate period: 75 days)**

| t  | DJES Bank       |                |              |             | DJS600        |                |              |             | FTSE300         |                |               |             |
|----|-----------------|----------------|--------------|-------------|---------------|----------------|--------------|-------------|-----------------|----------------|---------------|-------------|
|    | Mean            | Std dev.       | t stat       | Sig         | Mean          | Std dev.       | t stat       | Sig         | Mean            | Std dev.       | t stat        | Sig         |
| -6 | -,0569          | ,85186         | -,542        | ,589        | -,0575        | ,80674         | -,604        | ,547        | ,0456           | ,73413         | ,439          | ,662        |
| -5 | ,1960           | 1,23131        | 1,293        | ,200        | ,1316         | 1,12988        | ,988         | ,326        | ,1771           | 1,14219        | 1,097         | ,278        |
| -4 | ,0320           | ,99156         | ,262         | ,794        | -,0105        | ,90356         | -,099        | ,922        | ,0344           | ,98708         | ,247          | ,806        |
| -3 | ,0408           | 1,12881        | ,294         | ,770        | ,1227         | ,96438         | 1,080        | ,284        | ,1882           | ,95472         | 1,394         | ,170        |
| -2 | -,1027          | 1,04058        | -,802        | ,426        | -,0052        | 1,03514        | -,043        | ,966        | ,0784           | 1,11739        | ,496          | ,622        |
| -1 | ,1133           | 1,08991        | ,844         | ,402        | ,0456         | 1,02436        | ,378         | ,707        | ,0303           | 1,14241        | ,188          | ,852        |
| 0  | ,0412           | ,76302         | ,439         | ,662        | ,0528         | ,86465         | ,518         | ,606        | ,1205           | ,99696         | ,854          | ,397        |
| 1  | ,1928           | 1,02753        | 1,525        | ,132        | ,0645         | ,88186         | ,621         | ,537        | ,0255           | 1,01198        | ,178          | ,859        |
| 2  | -,0037          | ,85345         | -,035        | ,972        | -,0232        | ,82142         | -,240        | ,811        | <b>**-,2330</b> | <b>,68979</b>  | <b>-2,388</b> | <b>,021</b> |
| 3  | <b>***,3626</b> | <b>1,06367</b> | <b>2,769</b> | <b>,007</b> | <b>*,2523</b> | <b>1,08392</b> | <b>1,975</b> | <b>,052</b> | <b>*,3096</b>   | <b>1,24416</b> | <b>1,759</b>  | <b>,085</b> |
| 4  | -,0795          | 1,01830        | -,635        | ,528        | -,0545        | ,91315         | -,506        | ,614        | -,0568          | ,96234         | -,417         | ,678        |
| 5  | -,0208          | ,97548         | -,173        | ,863        | ,0061         | ,91825         | ,056         | ,955        | -,0799          | ,94461         | -,598         | ,553        |
| 6  | ,1952           | 1,00510        | 1,577        | ,120        | ,1021         | 1,00636        | ,861         | ,392        | ,1647           | 1,09594        | 1,062         | ,293        |

\* Significant at the 10% level

\*\* Significant at the 5% level

\*\*\* Significant at the 1% level

**Student test on the ASAR (estimate period: 150 days)**

| t  | DJES Bank       |                |              |             | DJS600          |                |              |             | FTSE300         |                |               |             |
|----|-----------------|----------------|--------------|-------------|-----------------|----------------|--------------|-------------|-----------------|----------------|---------------|-------------|
|    | Mean            | Std dev.       | t stat       | Sig         | Mean            | Std dev.       | t stat       | Sig         | Mean            | Std dev.       | t stat        | Sig         |
| -6 | -,0522          | ,88681         | -,404        | ,688        | ,0226           | ,79617         | ,199         | ,843        | ,0659           | ,69649         | ,583          | ,563        |
| -5 | ,2745           | 1,16135        | 1,621        | ,112        | ,1989           | 1,11127        | 1,253        | ,216        | ,2605           | 1,05398        | 1,524         | ,136        |
| -4 | ,0583           | ,94418         | ,423         | ,674        | ,0737           | ,91737         | ,562         | ,577        | ,0953           | ,98046         | ,599          | ,553        |
| -3 | -,0044          | 1,09143        | -,028        | ,978        | ,1862           | ,88153         | 1,478        | ,146        | ,1680           | ,89297         | 1,160         | ,254        |
| -2 | -,2638          | 1,15726        | -1,563       | ,125        | -,1566          | 1,12266        | -,976        | ,334        | -,1231          | 1,21664        | -,624         | ,537        |
| -1 | ,0669           | 1,20899        | ,379         | ,706        | -,0116          | 1,19463        | -,068        | ,946        | -,0202          | 1,31865        | -,094         | ,925        |
| 0  | ,0046           | ,72755         | ,043         | ,966        | -,0643          | ,77466         | -,581        | ,564        | -,0260          | ,85685         | -,187         | ,852        |
| 1  | ,1998           | ,96203         | 1,424        | ,161        | ,0665           | ,84514         | ,551         | ,584        | ,0508           | ,89243         | ,351          | ,728        |
| 2  | -,0061          | ,83815         | -,050        | ,960        | -,0356          | ,81366         | -,306        | ,761        | <b>**-,2299</b> | <b>,63404</b>  | <b>-2,235</b> | <b>,032</b> |
| 3  | <b>**-,4049</b> | <b>1,07392</b> | <b>2,585</b> | <b>,013</b> | <b>**-,3607</b> | <b>1,11657</b> | <b>2,261</b> | <b>,028</b> | <b>**-,4801</b> | <b>1,25519</b> | <b>2,358</b>  | <b>,024</b> |
| 4  | -,0567          | 1,15682        | -,336        | ,738        | -,0138          | 1,17206        | -,082        | ,935        | -,0461          | 1,20674        | -,235         | ,815        |
| 5  | -,0508          | ,94971         | -,367        | ,715        | ,0767           | ,94722         | ,567         | ,574        | -,0225          | ,89874         | -,155         | ,878        |
| 6  | ,1624           | ,82702         | 1,346        | ,185        | ,0976           | ,88823         | ,769         | ,446        | ,0498           | ,94961         | ,324          | ,748        |

\* Significant at the 10% level

\*\* Significant at the 5% level

\*\*\* Significant at the 1% level

**Wilcoxon test on the ASAR (estimate period: 75 days and 150 days)**

| t  | 75 days         |             |               |             |                |             | 150 days        |             |                |             |                |             |
|----|-----------------|-------------|---------------|-------------|----------------|-------------|-----------------|-------------|----------------|-------------|----------------|-------------|
|    | DJES Bank       |             | DJS600        |             | FTSE300        |             | DJES Bank       |             | DJS600         |             | FTSE300        |             |
|    | W               | Sig         | W             | Sig         | W              | Sig         | W               | Sig         | W              | Sig         | W              | Sig         |
| -6 | -,150           | ,881        | -,808         | ,419        | ,072           | ,942        | -,222           | ,824        | -,035          | ,972        | ,225           | ,822        |
| -5 | 1,217           | ,224        | 1,190         | ,234        | ,980           | ,327        | 1,397           | ,162        | 1,209          | ,227        | 1,370          | ,171        |
| -4 | ,067            | ,947        | -,438         | ,662        | -,024          | ,981        | -,032           | ,975        | -,144          | ,885        | -,036          | ,971        |
| -3 | ,022            | ,982        | 1055          | ,291        | <b>*1,820</b>  | <b>,069</b> | -,497           | ,619        | ,850           | ,395        | 1,153          | ,249        |
| -2 | -,559           | ,576        | -,230         | ,818        | ,449           | ,654        | -1,344          | ,179        | -,880          | ,379        | -,457          | ,648        |
| -1 | <b>*1,932</b>   | <b>,053</b> | 1,083         | ,279        | ,748           | ,454        | <b>**2,085</b>  | <b>,037</b> | ,642           | ,521        | ,486           | ,627        |
| 0  | ,751            | ,453        | ,404          | ,686        | ,903           | ,367        | ,476            | ,634        | -,343          | ,731        | ,152           | ,879        |
| 1  | 1,447           | ,148        | 1,033         | ,302        | ,401           | ,689        | ,899            | ,368        | ,303           | ,762        | ,138           | ,890        |
| 2  | 016             | ,987        | -,438         | ,662        | <b>**2,148</b> | <b>,032</b> | ,265            | ,791        | -,453          | ,651        | <b>*1,791</b>  | <b>,073</b> |
| 3  | <b>***2,840</b> | <b>,005</b> | <b>*1,723</b> | <b>,085</b> | <b>*1,665</b>  | <b>,096</b> | <b>***2,836</b> | <b>,005</b> | <b>**2,323</b> | <b>,020</b> | <b>**2,545</b> | <b>,011</b> |
| 4  | -,961           | ,336        | -1,235        | ,217        | -1,125         | ,261        | -,593           | ,553        | -,463          | ,644        | -,602          | ,547        |
| 5  | -,386           | ,699        | -,174         | ,862        | -,681          | ,496        | -,222           | ,824        | ,602           | ,547        | -,181          | ,856        |
| 6  | ,878            | ,380        | ,325          | ,745        | ,545           | ,585        | 1,079           | ,280        | ,970           | ,332        | ,457           | ,648        |

\* Significant at the 10% level

\*\* Significant at the 5% level

\*\*\* Significant at the 1% level

## 2. Comments

Considering the diversity of the market indices, the estimation periods and the statistical tests, we present some methodological results. The different estimation periods have a weak influence on the results. Few abnormal returns are significant at  $t-3$  and  $t-1$ . At  $t+3$ , regardless of the estimation period used, the abnormal returns are significant. In contrast, the indices used react differently. All of the indices show significant returns at  $t+3$  but the FTSE Euro First 300 index detects a significant negative return at  $t+2$ . Finally, the tests also highlight one slight difference. The Wilcoxon test detects several abnormal returns between  $t-3$  and  $t-1$ . The study therefore shows that there is information conveyed a short time before the announcement. These results are consistent with the theory and the empirical literature. However, it is important to underline that these impacts are not significant for parametric tests. In contrast, all the tests at  $t+3$  are significant at the 1% level.

At  $t_0$ , the research does not detect a stock market reaction. The abnormal returns are not significant, regardless of the index, the estimation period or the statistical tests. The announcement of an issuance of covered bonds does not appear to convey information about the issuer. Two explanations can be proposed: either the market price already reflects the information, notably since the announcement of the implementation of a programme of covered bond issuance; or the announcement of an issuance of covered bonds does not convey any information about the issuer. However, the main result is at  $t+3$ . At this date, every tests are significant, regardless of the index or the estimation period used. The ASAR is therefore positive. So at first glance, the announcement of an issuance of covered bonds is a positive signal, consistent with the literature which presents many explanations: the disciplinary effect of the debt according to agency theory (Jensen, 1986), the minimisation of weighted average cost of capital (Modigliani and Miller, 1963), and a signal of unused debt capacity for the pecking order theory (Myers and Majluf, 1984). The  $H_0a$  hypothesis is therefore confirmed and the  $H_1$  hypothesis is not confirmed. However, the pecking order theory cannot explain the three days' delay in market reaction. Similarly, this delay is not consistent with the efficient market hypothesis. It is therefore necessary to offer subsequent analysis.

The issuance of covered bonds is interesting for financial institutions between 2007 and 2010. Managers' market timing is then revealed by two factors. On the one hand, a great number of covered bond issuances are carried out because covered bonds are consistent with the market conditions. The cover enables refinancing by investors reluctant to buy banking sector securities. The issuance thus reinforces the liquidity of the issuer's balance sheet. But the cover also allows for a risk premium decrease. The issuance therefore signals the solvency of the issuer. On the other hand, the study highlights market timing when we consider the legal status of the covered bonds which are more often euro medium term notes (EMTN). These short and medium-term debt securities, linked to bonds, have a specific issuance process and represent a flexible financing solution for the manager. The three days' delay and the series of negative abnormal return at  $t+2$  and positive abnormal return at  $t+3$  can be explained. Indeed, in contrast to stand-alone bonds, EMTN are issued as part of a program of issuances authorised by the shareholders for a predetermined duration and amount. The manager can decide upon tap issuances according to the needs of the firm's activity. The dealers therefore

play an important role since they assure the marketing and the listing of the covered bonds by connecting potential investors with the issuer (Green *et al.*, 2007). Typically, few days before the issuance, between  $t-3$  and  $t-1$ , a dealer is responsible for contacting a few investors to assess their interest for a new issuance of covered bonds. The results of this poll help to define the amount, maturity and the estimated price of the issuance. This stage, named whisper, naturally conveys information on the market before the official announcement of the issuance. The bond market is therefore often considered to be less transparent than the stock market (Edwards *et al.*, 2007). At  $t_0$ , the dealers inform investors of the issuance and its approximate characteristics, (the guidance). They also open reservation books. At the end of the day, the reservations are generally closed. The issuer then defines the definitive characteristics of the issuance. Between  $t+1$  and  $t+3$ , investors are informed by dealers of the success or failure of the issuance through a variety of indicators: rate of subscription of the issuance, final price, type of investors having subscribed, etc. This means that in the particular context of the subprime crisis, the key factor is not the announcement of an issuance or its effective realisation, but its reception by the investors. A similar configuration where negative and positive abnormal returns alternate has already been highlighted and explained by the uncertainty about the outcome of the issuance (Mikkelsen et Partch, 1986). However, the study emphasizes that the abnormal return at  $t+2$  is much weaker than the positive return at  $t+3$ . At  $t+2$ , abnormal return is only significant at the 5% level and it only appears when the market model uses FTSE Euro First 300. Therefore, the information is the success of the refinancing operation within a financial context that is particularly risk-averse. Taking into account the specific issuance procedure of the EMTN, this success is disclosed after a three days delay by the dealers. The abnormal returns are therefore positive. The success of the issuance leads to a transfer of wealth from the covered bonds holders to the shareholders. The research highlights thus the fact that it is the issuance success which is relevant for investors.

## **Conclusion**

The event study assesses the impact of the issuance of covered bonds between 2007 and 2010 on the shares of European financial institutions. It highlights a significant abnormal return at date  $t+3$  and not at date  $t_0$ . The signal is then positive. The three days' delay can be viewed as the market reacts not to the announcement of covered bond issuance but to the success of the issuance within an unfavourable context as far as issuers are concerned, where investors are questioning both the solvency and liquidity of the European banks. It is therefore possible to advise issuers to widely advertise the success of their refinancing operations on the markets by issuing covered bonds. Nevertheless, a question is raised concerning the capital structure. If the impact is positive on the share price, is it the same for the unsecured senior debt holders? The objective would then be to carry out an event study assessing the impact of an announcement of covered bond issuance on unsecured senior bond prices and on the prices of credit default swaps which cover the credit risk.

## **References**

Baker M. and Wurgler J. (2002), Market Timing and Capital Structure, *Journal of finance*, (57)2, 1-32

- Billett M. T., Flannery M. J. and Garfinkel J. A. (2011), Frequent Issuers' Influence on Long-Run Post-Issuance Returns, *Journal of Financial Economics*, (99)2, 349-364
- Binder J. J. (1998), The Event Study Methodology since 1969, *Review of Quantitative Finance and Accounting*, 11, 111-137
- Black F. and Scholes M. (1973), The Pricing of Options and Corporate Liabilities, *Journal of Political Economy*, 81, 637-654
- Boehmer E., Musumeci J. and Poulsen A. B. (1991), Event Study Methodology under Conditions of Event Induced Variance, *Journal of Financial Economics*, (30)2, 253-272
- Brown S. J. and Warner J. B. (1980), Measuring Security Price Performance, *Journal of Financial Economics*, 8, 205-258
- Brown S. J. and Warner J. B. (1985), Using Daily Stock Returns, *Journal of Financial Economics*, 14, 3-31
- Edwards A. K., Harris L. E. and Piwowar M. S. (2007), Corporate Bond Market Transaction Costs and Transparency, *Journal of Finance*, (62)3, 1421-1451
- European Central Bank (2008), Covered Bonds in the EU Financial System, 34 p.
- European Covered Bond Council (2010), European Covered Bond Factbook, 40 p.
- Fama E. F., Fisher L., Jensen M. C. and Roll R. (1969), The Adjustment of Stock Prices to New Information, *International Economic Review*, 10(1), 1-21
- Fama E. F. (1970), Efficient Capital Markets: A Review of Theory and Empirical Work, *Journal of finance*, (25)2, 383-417
- Green R. C., Hollifield B. and Schürhoff (2007), Dealer Intermediation and Price Behavior in the Aftermarket for New Bond Issues, *Journal of Financial Economics*, 86, 643-682
- Jensen M. C. (1986), Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *American Economic Review*, 76(2), 323-329
- Kraus A. and Liztenberger R. H. (1973), A State-Preference Model of Optimal Financial Average, *Journal of finance*, (28)4, 911-922
- Leland H. E. and Pyle D. H. (1977), Informational Asymmetries, Financial Structure, and Financial Intermediation, *Journal of Finance*, (32)2, 371-387
- Loutskina E. and Strahan P. E. (2009), Securitization and the Declining Impact of Bank Finance on Loan Supply: Evidence from Mortgage Originations, *Journal of Finance*, (64)2, 861-889

- Myers S. C. and Majluf N. S. (1984), Corporate Financing and Investment Decisions when Firms have Information that Investor do not have, *Journal of Financial Economics*, 13, 187-221
- Mikkelson W. H. and Partch M. M. (1986), Valuation Effects of Security Offerings and the Issuance Process, *Journal of Financial Economics*, 15, 31-60
- Modigliani F. and Miller M. H. (1958), The Cost of Capital, Corporation Finance and the Theory of Investment, 48, 261-297
- Modigliani F. and Miller M. H. (1963), Corporate Income Taxes and the Cost of Capital: a Correction, *American Economic Review*, 53, 433-443
- Roll R. (1977), A Critique of The Capital Asset Pricing Theory's Tests, *Journal of Financial Economics*, 4, 129-176
- Ross S. A., (1977), The Determination of Financial Structure: The Incentive-Signalling Approach, *Bell Journal of Economics*, (8)1, 23-40
- Scholes M. and Williams J. (1977), Estimating Betas from Nonsynchronous Data, *Journal of Financial Economics*, (5)3, 309-327
- Sharpe W. F. (1963), A Simplified Model for Portfolio Analysis, *Management Science*, 9, 277-293