

## Timing Ability of Corporate and Financial Issuers: Evidence from the German Market

**Prof. Dr. Christian Koziol** (Corresponding author)

Department of Finance, University of Tübingen

Nauklerstraße 47, 72074 Tübingen, Germany

Tel: +49 7071 29 78158, E-mail: christian.koziol@uni-tuebingen.de

**Jan Vogt**

Department of Finance, University of Tübingen

Nauklerstraße 47, 72074 Tübingen, Germany

E-mail: vogtjan@hotmail.com

**Abstract:** This paper examines the timing ability of listed German firms with their equity and debt capital market activities between 01/2001 and 06/2013. Given the assertion that firms try to time the market, the key question of this paper is whether managers are able to time equity and debt capital market activities and how timing translates into gains or losses for their shareholders. To capture this timing effect, we introduce *timing costs* which measure the percentage loss impact on the activity volume compared to the optimal date within a given time span. Financial firms, which are expected to have superior know-how due to a higher proximity of (parts of) their business to capital markets, remarkably demonstrate inferior performance for equity and debt issuance activities. With respect to equity buybacks, however, that are not driven by regulation and capital requirements, financial firms are able to outperform corporate firms. Likewise, firms that are more active on capital markets than others exhibit an inferior performance on timing for equity and bond issuances, while the performance is superior for equity buybacks.

**Keywords:** Equity issuance, Debt issuance, Share repurchase, Financing choice

**JEL Classifications:** G12, G14, G30, G32

### 1. Introduction

Firms frequently face financing demands which can be satisfied by equity and/or bond issues or have financial slack which they can use for share repurchases. Compared to other sophisticated institutional investors, firms enjoy three major benefits when accessing financial markets in order to adjust their capital structure. First, firms apparently have an informational advantage due to their proximity to financial information about themselves. Second, firms can make use of experiences from prior transactions. Third, firms can postpone or bring corporate decisions forward in order to improve their position. As a consequence, there are several reasons for why firms are supposed to have a timing ability for their issuances and/or repurchases of financing claims.

The goal of this paper is to analyze the timing abilities of corporate and financial firms. For this purpose, we consider a dataset consisting of 100 German DAX and MDAX companies and compute the *timing costs* of 759 identified capital market activities greater than or equal to 100 million EUR between 01/2001 and 06/2013. This quantity measures the maximum potential

increase of proceeds for issuances (or the maximum potential decrease of costs for buybacks) in percent when the transaction would have been executed earlier or later during a given time window. The notion behind this number is the intention of a firm to definitely carry out a financing decision where only the point in time but not the decision itself can be changed. Hence, the *timing costs* reveal to which extent a more favorable point in time for a transaction could have been chosen. Moreover, a comparison of the *timing costs* obtained by different firms allows us to separate successful firms from less successful ones.

In order to observe who in fact has superior timing abilities, we need to consider both various characteristics of the firm and different types of capital market activities.

The firm characteristics are:

- Financial versus non-financial sector:

This separation is driven by the hypothesis that financial firms might be better skilled and therefore more successful with their capital market activities.

- Active versus less active firms:

This classification accounts for the experience of a firm and imposes the hypothesis that players with a corresponding active track record should be more successful.

The considered types of capital market activities are:

- Equity issuance
- Bond issuance
- Equity buyback

Remarkably, our findings show that the group of financial firms is less successful than the group of corporate firms when issuing both equity and bonds. Our explanation for this surprising finding is that financial firms seem to have a need for a rapid execution once they issue capital. A plausible reasoning for this prompt demand might be hedging objectives or the satisfaction of regulatory conditions, since 'most financial service firms operate under a regulatory framework that governs how they are capitalized' (see Damodaran, 2013).

In addition, we obtain a similar observation for the group of active firms whose performance when issuing equity and bonds is inferior to that of the less active group. Again, a higher activity might be understood as higher pressure for prompt issuances such that the potential for delays of the issuances is limited. Thus, those firms can hardly make use of timing abilities when the issuance transaction needs to be carried out directly, e.g. for hedging reasons.

The findings, however, reverse when we consider equity buybacks. This particular capital market activity differs from the equity and bond issuances in the sense that there are no exogenous frictions such as regulatory conditions or hedging objectives involved. Once funds for the buybacks are available, it is only the point in time of the transaction that matters for the firm and determines the success of it. When focusing on the success of the financial group from share repurchases, we find a better performance than that of the non-financial group. Likewise, the group of active firms is now more successful than the less active group when share buybacks are concerned.

Hence, we can conclude that firms being under pressure to carry out an issuance cannot make use of their timing skills. However, when firms have some time for a transaction, such as in case of

share repurchases, the performance of both financial and active firms, which are supposed to be better skilled, is superior.

The timing ability of firms is an intensively discussed topic in the literature. Baker and Wurgler (2002), for example, provide a substantial overview of studies that conclude – based on returns subsequent to seasoned equity issues – market timing of firms to be on average successful. In contrast, other studies such as Eckbo, Masulis, and Norli (2000) do not see a confirmation of successful market timing.

As a consequence, our study contributes to the literature because we show that the benefits from the timing ability are transaction specific. Even though firms might have a timing ability, they do not make use of it when the pressure for a rapid issuance is severe. Moreover, by introducing *timing costs* we provide a new and simple measure that allows to evaluate the successfulness of timing ex post for both equity and bond transactions by quantifying the loss impact of the respective firm.

The remainder of the paper is organized as follows. Section 2 summarizes existing research on market timing of capital market activities by firms. Further, the area of ability and performance with respect to market timing is positioned and the respective hypotheses are developed. Section 3 follows with the description of the data sample including contextual information on the German equity and debt capital markets as well as the definition of the variate *timing costs* as key methodological component. Section 4 depicts the numerical findings by capital market activity type (equity issuance, equity buyback and bond issuance) and evaluates the hypotheses while Section 5 summarizes and concludes.

## **2. Literature Review and Hypotheses Development**

The prevalence of attempts to time the market in context of capital market activities is supported by a sizeable number of papers.

Baker and Wurgler (2002) conclude that market timing has significant explanatory power of capital structure as “capital structure is largely the cumulative outcome of past attempts to time the market”. Based on the market-to-book ratio as measure for potential market timing opportunities, low leverage (high leverage) firms are more likely to issue equity at high (low) valuations.

Gaud, Hoesli and Bender (2005) provide evidence that capital structure policies in Europe cannot be reasonably described by tradeoff or pecking order theory (in their most common forms) based on a sample of more than 5,000 European firms over the period 1998-2000. They find that firms in Europe limit themselves to an upper, but not to a lower level of debt. Furthermore, they find that financing and investment activities interact, firms with higher cash positions conduct less equity and debt issuances and finally that managers try to time the market.

Henderson, Jegadeesh, and Weisbach (2006) conclude based on a large global sample of more than 195,000 issues worth US \$25.3 trillion that market timing considerations appear to be important in security issuance decisions in most countries. Firms all around the world are more likely to issue equity preceding low equity market returns and are more likely to issue debt preceding high equity market return.

Kayhan and Titman (2007) find that capital structures of firms are managed by adjusting to target debt ratios, although at low adjustment speeds due to firm specific histories of cash flow, investment expenditures and stock prices.

An alternative view is provided by Dittmar and Dittmar (2007). They deduce that the levels of equity buybacks are not explained by market timing but by surplus cash levels resulting from business cycles. Dittmar and Thakor (2007) state that firms issue equity when stock prices are high not to exploit misvaluations and thus to time the market. They propose a 'managerial investment autonomy' theory that predicts that a firm will issue equity when its stock price is high because that is when investors have a high propensity to agree with managerial decisions.

Elliott, Koeter-Kant and Warr (2008) state that equity market mispricing plays a significant, if not dominant, role in the security choice decision.

With respect to debt capital markets, Greenwood, Hanson and Stein (2010) assume that firms act as macro liquidity providers and absorb supply shocks initiated by changes in the maturity structure of government debt. Without assuming any forecasting advantage on bond returns of corporate issuers, this behavior explains the maturity choice of firms and is more observed for firms with higher financial flexibility demonstrated by high cash and cash flow relative to assets, market cap and dividend payout ratio.

Dong, et al. (2012) find that market timing and pecking-order theory coexist for Canadian firms based on capital market activities between 1998 and 2007. Market timing is prevalent in equity issues and buybacks when firms are not financially constraint (i.e. high cash and cash generation, low leverage, etc.), while pecking order better explains capital market activities of undervalued firms.

Levy and Shalev (2016) analyze differences in bond buybacks conducted in the open market (intransparent) and via tender offers (transparent). They find that during times of higher uncertainty in capital markets, firms tend to prefer open market buybacks and that firms are able to conduct those buybacks under more favorable conditions compared to tender offers. In addition, they find gains from extinguishment in income statements to be higher for open market buybacks and thus conclude that managers are able to time the market.

Although the prevalence of attempts to time the market in context of capital market activities is reflected in a sizable number of papers and reported in several surveys from CFOs as summarized by Graham, Campbell and Harvey (2001), or Baker and Wurgler (2012), the successfulness of market timing is an ongoing debate.

Most research for that matter is based on post issue or post buyback returns and/or exploits the market-to-book ratio to determine anomalies (overpricings or underpricings). Unfortunately, both ways are very sensitive to assumptions and none existing approach is generally accepted. Billett, et al. (2011) assert that post-issuance returns have nothing to do with the specific type of security issued but with the number and variety of capital market activities conducted by a firm. Fama (1998) states with respect to return time series that apparent anomalies can be due to methodology, most long-term return anomalies tend to disappear with reasonable changes in technique. As regards to the market-to-book ratio industry and firm specifics, as well as market trends, hamper an unambiguous identification of anomalies. This holds even if the market-to-book-ratio is decomposed into a market-value-to-intrinsic-value and an intrinsic-value-to-book-value component according to Gubin (2012), since intrinsic value becomes debatable here.

By providing a new and transaction specific measure *timing costs* that allows for ex post quantification of the loss impact resulting from the market timing behavior of a firm, we believe to

contribute to the existing literature, since we are able to analyze the success of market timing without having to deal with the mentioned obstacles when trying to identify anomalies.

Successful market timing on a constant basis requires having superior prediction skills compared to the overall market. Due to a differing proximity between the ability to predict capital markets and the core business of financial and corporate firms, we expect a different performance in market timing of financials and corporates. Furthermore, we assume that companies that act more actively on capital markets (like “frequent issuers”) – and as such have a higher experience plus stronger relationships to intermediates and investors – may be more successful with respect to market timing.

Thus, we want to formulate the following hypotheses:

**H1:** Financial firms (“*Financials*”) do have a higher proximity to capital markets than corporate firms (“*Corporates*”) and thus are expected to exhibit superior results with respect to the performance of their capital market activities (i.e. financial firms exhibit lower *timing costs* than corporate firms).

**H2:** Firms that are more active on capital markets and thus conduct a higher number of capital market activities (“*Active*”) than others (“*LessActive*”) do have a higher experience and are expected to exhibit superior results with respect to the performance of their capital market activities (i.e. firms acting more frequently exhibit lower *timing costs* than firms acting less frequently).

### **3. Method and Data**

The data sample consists of German DAX and MDAX companies and thus covers most companies with significant capital market activities in Germany between 01/2001 and 06/2013.

According to the classification of IBOXX, the sample includes data of EUR-denominated capital market activities being equal to or greater than EUR 100 million for 12 listed financial and 88 listed corporate German companies<sup>1</sup>.

Within the 12.5 years period or 50 quarters under consideration, we identified 379 bond issuances and 222 equity issuances totaling in EUR 341.0 billion and EUR 179.6 billion, respectively. Buybacks sum up to 29 for debt and 158 for equity that translate to EUR 7.3 billion and EUR 101.2 billion in amount.

The upper part of Table 1 summarizes the total number of equity and debt capital market activities separately for issuances and buybacks. All four different types, i.e. equity issuance, equity buyback, debt issuance and debt buyback are listed in total and for the respective subsets *Financials*, *Corporates*, *Before financial crisis* and *After financial crisis*<sup>2</sup>.

---

<sup>1</sup> Equity data series of Degussa, DEPFA, Heidelberger Druckmaschinen, Hornbach Baumarkt, IKB, IVG, KUKA, Vivacon are excluded due to significant implausible data points; bond issuances and bond buybacks do not include Floaters, as for Floaters market timing with respect to yield levels is qua definition not existent.

<sup>2</sup> Begin of the financial crisis is set to 1st August, 2007 and all time periods before are labeled “before financial crisis”, while for convenience all periods after are labeled “after financial crisis” instead of more correctly “after begin of financial crisis”.

On the subject of equity issues and buybacks, the depicted figures represent the number of firm/quarter combinations in which the changes of common shares outstanding (excluding treasury shares)<sup>3</sup> multiplied by the average stock price of the respective quarter exceeds EUR 100 million.

As for bonds, the sample consists of 379 bond issuances (senior and subordinated, secured and unsecured non-callable and non-putable bonds issued by German DAX and MDAX firms with maturities below 11 years, in EUR or preceding currencies, tracked in the indexes “iBoxx EUR” and “iBoxx EUR High Yield”, plus bonds recorded in HVB's high yield pace notes as of 08/2013) and 29 bond repurchases<sup>4</sup> exceeding EUR 100 million in volume each.

The lower part of the table exhibits the respective amounts of the identified capital market activities in an analogous manner.

**Table 1.** Number and amount of capital market activities in German equity and bond markets – issuance vs. buyback, 01/01/2001 - 30/06/2013

**A: Number**

| Number of capital market activities (firm/quarter combinations) |            | Equity |                         |                        | Debt  |                         |                        |
|---|------------|--------|-------------------------|------------------------|-------|-------------------------|------------------------|
|   |            | Total  | Before financial crisis | After financial crisis | Total | Before financial crisis | After financial crisis |
| <b>Issuance</b>   | Total      | 222    | 103                     | 119                    | 379   | 138                     | 241                    |
|   | Financials | 52     | 29                      | 23                     | 65    | 26                      | 39                     |
|   | Corporates | 170    | 74                      | 96                     | 314   | 112                     | 202                    |
| <b>Buyback</b>  | Total      | 158    | 75                      | 83                     | 29    | 7                       | 22                     |
|   | Financials | 38     | 18                      | 20                     | 29    | 7                       | 22                     |
|   | Corporates | 120    | 57                      | 63                     | 0     | 0                       | 0                      |

**B: Amount**

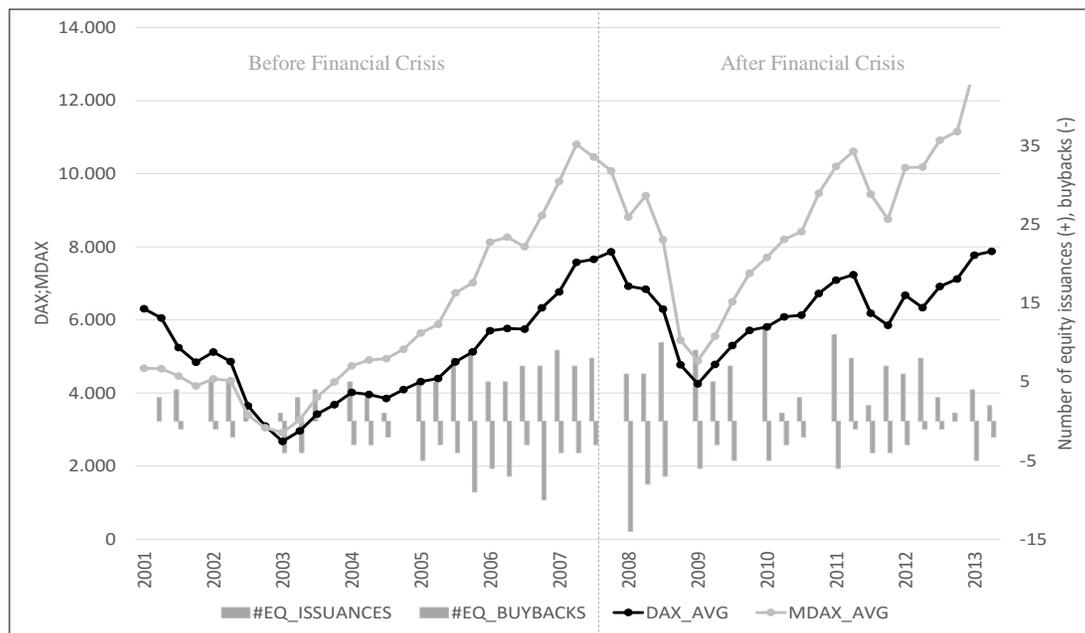
| Amount of capital market activities [billion EUR] |            | Equity |                         |                        | Debt  |                         |                        |
|---|------------|--------|-------------------------|------------------------|-------|-------------------------|------------------------|
|   |            | Total  | Before financial crisis | After financial crisis | Total | Before financial crisis | After financial crisis |
| <b>Issuance</b>                                   | Total      | 179.6  | 85.0                    | 94.6                   | 341.0 | 126.4                   | 214.6                  |
|   | Financials | 76.3   | 37.8                    | 38.5                   | 67.2  | 22.2                    | 45.0                   |
|   | Corporates | 103.3  | 47.2                    | 56.1                   | 273.8 | 104.2                   | 169.6                  |
| <b>Buyback</b>                                    | Total      | 101.2  | 51.1                    | 50.1                   | 7.3   | 1.7                     | 5.6                    |
|   | Financials | 29.4   | 19.0                    | 10.4                   | 7.3   | 1.7                     | 5.6                    |
|   | Corporates | 71.8   | 32.1                    | 39.7                   | 0.0   | 0.0                     | 0.0                    |

<sup>3</sup> Based on Bloomberg's BS\_SH\_OUT that is quarterly available for the German equity market; preferred shares (BMW, Fuchs Petrolub, Henkel, RWE and Volkswagen) are excluded.

<sup>4</sup> According to Bloomberg's Corporate Actions.

This table presents the number of capital market activities (A) in firm/combinations and the respective amounts (B) in billion EUR separated by capital market activity type (equity versus debt; issuance versus buyback), industry (*Financials* versus *Corporates*) and time period (before versus after financial crisis)<sup>5</sup>.

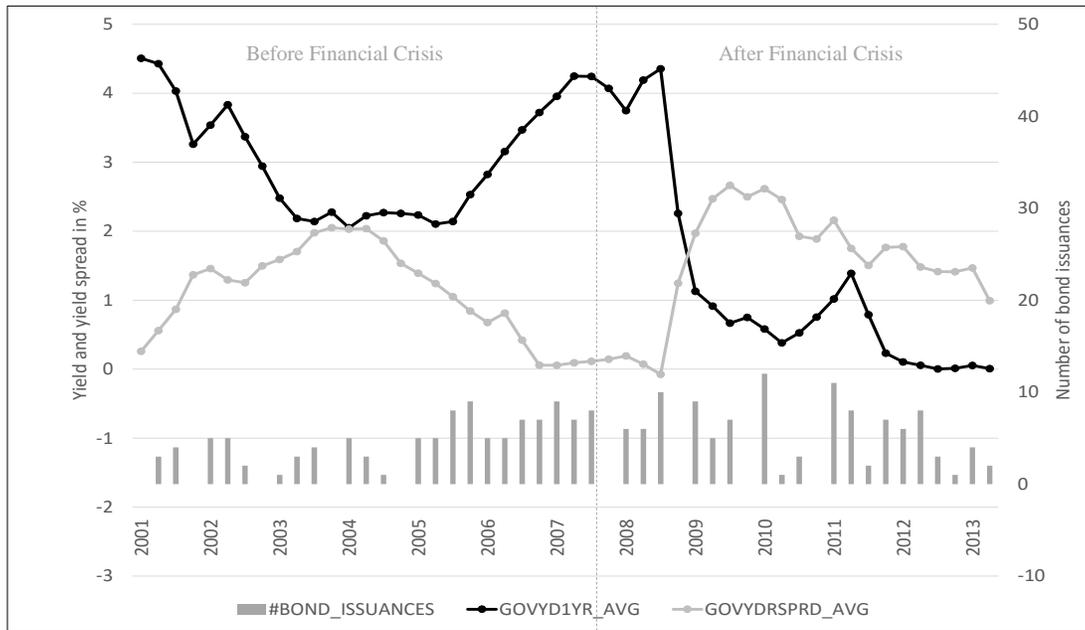
According to Figure 1, the German equity market represented by price levels of DAX and MDAX showed a steady increase from its low in 2003 until the beginning of the financial crisis. Then it dropped until the beginning of 2009 and since then reached (DAX) or exceeded (MDAX) pre-crisis levels. Equity issuances increased in number and total amount from before to after financial crisis times, while equity buybacks increased in number but decreased in amount.



**Figure 1.** German equity market levels and number of equity issuances / buybacks

This figure depicts the quarterly average of daily DAX and MDAX performance index levels and the quarterly number of equity issuances and buybacks of German firms from 01.01.2001 to 30.06.2013.

<sup>5</sup> See Figure 3 of the appendix for distribution of volumes by capital market activity type.



**Figure 2.** German government yield (1yr), spread (10-1yr) and number of bond issuances

This figure depicts the quarterly average of daily 1-year German government yields, the quarterly average of daily 10-year to 1-year German government spreads and the quarterly number of bond issuances of German firms from 01.01.2001 to 30.06.2013.

As Figure 2 shows, the market environment for firms being active in the German debt capital market changed significantly in the time period from 01/2001 to 06/2013 with long-term funding costs (10-year German government yield) having decreased from 5.3% in 2002 to 1.5% in 06/2013.

Short-term rates, here the 1-year German government yield, in before crisis times mostly between 2% and 4% range, sharply decreased from its high of 4.5% in 2008 to close to zero, where it stayed since the beginning of 2012. The German 1-year/10-year government spread declined from its high of approx. 2% in 2003 to zero in the month right before the start of the financial crisis and then increased rapidly to approx. 2.5% before balancing out at 1.5% in 2013.

Although the period before the financial crisis is with 79 months slightly longer than the period after the financial crisis (71 months), the after crisis time holds a higher number of debt issuances and buybacks and higher total amounts for issuances and buybacks.

To measure the performance of capital market activities conducted by German financial and corporate firms, for each individual capital market activity the “optimal” timing within three different time spans (-/+ 2 quarters, +/- 3 quarters, +/- 4 quarters) is determined.

It is assumed that firm management strives to create maximum wealth for existing long-term investors, i.e. market timing of issuing activities would be optimal if prices are as high as possible, while optimum for buyback activities would be achieved for prices as low as possible.

In this sense, we determine *timing costs* as the percentage loss relative to the situation in which the respective capital market activity would have been conducted with optimal timing within the respective time span for each capital market activity. Hence, we can interpret the *timing costs* as the

failure from the issuance or buyback in percent. This is because a different point in time during the time window would have improved (reduced) the proceeds (cost) of the issuance (buyback) by the percentage amount expressed by *timing costs*.

Then hypotheses H1 to H2 are tested by comparing differences in averages of the *timing costs* series for the respective subsets (*Financials* versus *Corporates*, *LessActive* versus *Active* representing capital market activities of firms with a lower or higher number of capital market activities of that type) for each capital market activity type and optimization span separately. Hereby, we use the non-parametric Wilcoxon Mann Whitney test statistic to determine significance levels with respect to differences in means of *timing costs* between the different subsets.

For equity issuance (equity buyback)<sup>6</sup>  $j$ , *timing costs* are calculated as the maximum (minimum) percentage price difference between quarter average daily prices  $PX_{i,t}$  of the respective stock of firm  $i$  within the defined time span  $s$  and the quarter average daily prices of the quarter  $q_j$  in which the equity issuance was conducted:

$$Timing\_Cost\_Equity\_Issuance_{i,j,s} = \frac{MAX_{q_j-s \leq t \leq q_j+s}(PX_{i,t})}{PX_{i,q_j}} - 1 \quad (1)$$

$$Timing\_Cost\_Equity\_Buyback_{i,j,s} = 1 - \frac{MIN_{q_j-s \leq t \leq q_j+s}(PX_{i,t})}{PX_{i,q_j}} \quad (2)$$

For bond issuance  $j$ , *timing costs* are defined as the maximum percentage increase in proceeds firm  $i$  could have realized according to prevailing yield levels within time span  $s$  (or accordingly the failure from choosing a non-optimal date).

To determine *timing costs*, a bond specific yield  $y_{i,t}$  is calculated for each quarter within time span  $s$  by linearly combining quarter average daily 1-year and 10-year government rates according to the bond's maturity at issue in a first step. In a second step, a bond and company specific spread  $sprd_{i,j}$  is added before the relative price difference of the bond with modified duration  $D_{mod,j}$  is calculated:

$$Timing\_Cost\_Bond\_Issue_{i,j,s} = MAX_{q-s \leq t \leq q+s}(-D_{mod,j} \Delta(y_{j,t} + sprd_{i,j})) \quad (3)$$

Hereby, yield changes  $\Delta(y_{j,t} + sprd_{i,j})$  are approximated by a change in government rates  $\Delta(y_{j,t})$  while holding the issuance and company specific spread  $sprd_{i,j}$  constant. We consciously focus on market induced variations and ignore potential upcoming credit quality changes as the latter is often not available. In general, when a firm issues a bond with a given credit spread, we cannot observe credit spreads for points in time prior to the issuance. However, these credit spreads were required for the computation of the *timing costs* when caring for both market environment and firm specific changes.

To limit model biases due to the approximated yield change via maturity matched 1-year and 10-year government yields, the bond universe is constrained to bonds with a maturity at issue of 11 years as maximum.

<sup>6</sup> Equity issuances are identified based on the number of share changes according to Bloomberg's BS\_SH\_OUT consistently available on a quarterly basis for the German equity market.

## 4. Results

The data shows significant differences in *timing costs* of equity issuances, equity buybacks and bond issuances. The average *timing costs* of equity issuances between 01/2001 and 06/2013 for the different optimization spans 2 quarters, 3 quarters and 4 quarters amount to 22.96%, 34.53% and 43.15%, respectively. Average *timing costs* for equity buybacks are 15.04%, 20.79% and 24.60%, while average *timing costs* for bond issuances equal 2.12%, 2.75% and 3.31%.

For equity issuances differences of average *timing costs* between *Active* and *LessActive* firms vary from 3.34% (2 quarters) to 10.12% (4 quarters) according to Table 3-A, while *Corporates* vs. *Financials* differ from 14.37% (2 quarters) to 29.01% (4 quarters). Within the subset of *Corporates*, *Active* firms exhibit on average 7.69%, 10.06% and 13.50% higher *timing costs* for the optimization spans 2, 3 and 4 quarters. In contrast, the subset of *Financials* exhibits on average -92.73%, -124.74% and -115.71% as differences between *Active* and *LessActive* firms.

Regarding equity buybacks, Table 3-B exhibits *Active* with average differences to *LessActive* from -1.54% (2 quarters) to -1.95% (4 quarters), while *Corporates* show average differences in *timing costs* to *Financials* of 3.57% (3 quarters) and 2.91% (4 quarters). The subsets *Corporates* and *Financials* differ in *timing costs* for *Active* vs. *LessActive* on average from 0.77% (2 quarters) to 2.07% (4 quarters) and -28.66% (2 quarters) to -39.56% (4 quarters).

In case of bond issuances *Active* have on average higher *timing costs* compared to *LessActive* of 0.31% (2 quarters) to 0.34% (4 quarters), whereas *Corporates* show on average lower *timing costs* of 0.53% (2 quarters) to 0.77% (4 quarters) compared to *Financials* as shown in Table 3-C. Within the subset of *Corporates*, *Active* firms exhibit on average 0.30%, 0.37% and 0.15% higher *timing costs* for the optimization spans 2, 3 and 4 quarters, while the subset of *Financials* show on average 0.37%, 1.19% and 1.26% as difference to *LessActive* firms.

### Findings with respect to hypothesis H1 (*Financials* versus *Corporates*):

Financial firms exhibit with their issue activities an inferior performance (higher *timing costs*) compared to corporate firms. For equity issuances differences in average *timing costs* vary from 14.37% for 2-quarters optimization span to 29.01% for 4-quarters optimization span. For bond issuances differences in average *timing costs* vary from 0.53% to 0.80%, significant at below 5% for 2-quarters optimization spans and at below 1% for 3- and 4-quarters optimization spans.

In contrast, for equity buybacks financial firms demonstrate superior performance. For 3-quarters and 4-quarters optimization spans differences of averages amount to 3.57% (significant at 10.31%) and 2.91% (significant at 13.72%) compared to corporate firms.

These findings (see Table 2) indicate that financial firms might have superior know-how with respect to capital markets due to higher proximity of (parts of) their business. However, financial firms might not have been able to translate that into superior results with respect to the performance of their capital market activities entirely (lower performance on equity and bond issuances) due to e.g. capital structure requirements that require prompt action when needed. With respect to equity buybacks – that have a more discretionary character compared to issue activities – financial firms can exploit their superior know-how and demonstrate superior results.

Findings with respect to hypothesis H2 (Active versus LessActive):

Firms that conduct more equity issuances than others demonstrate an inferior performance (higher *timing costs*). Differences of average *timing costs* vary from 3.34% (2-quarters) to 10.12% (4-quarters) significant at below 10% level. Likewise, firms that conduct more bond issuances than others demonstrate an inferior performance (higher *timing costs*). Differences of average *timing costs* vary from 0.31% to 0.51% for 2-quarters to 4-quarters optimization spans.

With respect to equity buybacks, firms that conduct more equity buybacks exhibit a superior performance (lower *timing costs*). Differences of average *timing costs* between firms that conduct more equity buybacks and those that conduct less equity issuances vary between 1.54% and 1.95%.

Hence, we get similar observations (see Table 2) for the group of active firms (versus less active firms) as for financial firms (versus corporate firms). The performance of the *Active* group when issuing equity and bonds is inferior compared to that of the *LessActive* group. Again, a higher activity might be understood as a higher pressure for a prompt issuance such that the potential for delays of the issuance is limited. Thus, those firms can hardly make use of their timing abilities when the issuance transaction needs to be carried out e.g. for hedging reasons.

In contrast, equity buybacks differ from equity and bond issuances in the sense that there are no exogenous frictions such as regulatory conditions or hedging objectives involved. Once funds for the buybacks are available, it is only the point in time of the transaction that matters for the firm and determines the success of it. For announced share buyback programs, the resulting implementation time is sometimes stretched over years. Consistently, we observe the *Active* group to outperform the *LessActive* group, again similar to the performance of *Financials* versus *Corporates*.

**Table 2.** *Timing costs* differences and support for hypothesis

|                  | <b>Hypothesis 1:</b><br><i>Financials</i> exhibit higher timing ability vs. <i>Corporates</i> (i.e. financial firms exhibit lower <i>timing costs</i> than corporate firms).   |    |    | <b>Hypothesis 2:</b><br><i>Active</i> exhibit higher timing ability vs. <i>LessActive</i> (i.e. Active firms exhibit lower <i>timing costs</i> than less active firms).  |    |    |
|------------------|--|----|----|--|----|----|
|                  | Q2   | Q3 | Q4 | Q2   | Q3 | Q4 |
| Equity issuances | X  | X  | X  | X  | X  | X  |
| Equity buybacks  | X  | √  | √  | √  | √  | √  |
| Bond issuances   | X  | X  | X  | X  | X  | X  |
|                  | <ul style="list-style-type: none"> <li>• Timing differences of 7 out of 9 capital market activity type and time span combinations do not support hypothesis H1</li> <li>• Timing differences of 2 out of 3 time span analyses support hypothesis H1 for equity buybacks</li> </ul> |    |    | <ul style="list-style-type: none"> <li>• Timing differences of 6 out of 9 capital market activity type and time span combinations do not support hypothesis H2</li> <li>• Timing differences of 3 out of 3 time span analyses support hypothesis H2 for equity buybacks</li> </ul> |    |    |

Table 2 summarizes the average *timing costs* differences per time span (quarter), capital market activity type and relates those to the hypothesis.  $\sqrt{\cdot}$ := average *timing costs* differences support hypothesis; X:= average *timing costs* differences do not support hypothesis.

**Table 3.** Differences in *timing costs*

| <b>A: Equity issuances</b> |                   |                       |                   |                   |
|----------------------------|-------------------|-----------------------|-------------------|-------------------|
|                            | Total             |                       | Corporates        | Financials        |
| Optimization Span          | Active-LessActive | Corporates-Financials | Active-LessActive | Active-LessActive |
| 2Q                         | 3.3430%           | -14.3715%             | 7.6903%           | -92.7337%         |
|                            | 4.33%             | 64.40%                | 2.92%             | 64.56%            |
| 3Q                         | 5.3578%           | -24.2062%             | 10.0604%          | -124.7382%        |
|                            | 8.05%             | 76.41%                | 9.10%             | 53.91%            |
| 4Q                         | 10.1166%          | -29.0141%             | 13.4980%          | -115.7117%        |
|                            | 7.48%             | 73.42%                | 8.99%             | 44.53%            |

| <b>B: Equity buybacks</b> |                   |                       |                   |                   |
|---------------------------|-------------------|-----------------------|-------------------|-------------------|
|                           | Total             |                       | Corporates        | Financials        |
| Optimization Span         | Active-LessActive | Corporates-Financials | Active-LessActive | Active-LessActive |
| 2Q                        | -1.5385%          | -0.3690%              | 0.7668%           | -28.6627%         |
|                           | 60.89%            | 53.56%                | 38.26%            | 98.03%            |
| 3Q                        | -1.6843%          | 3.5733%               | 1.5428%           | -28.7035%         |
|                           | 62.26%            | 10.31%                | 31.08%            | 96.88%            |
| 4Q                        | -1.9470%          | 2.9073%               | 2.0704%           | -39.5623%         |
|                           | 71.44%            | 13.72%                | 33.56%            | 98.99%            |

| <b>C: Bond issuances</b> |                   |                       |                   |                   |
|--------------------------|-------------------|-----------------------|-------------------|-------------------|
|                          | Total             |                       | Corporates        | Financials        |
| Optimization Span        | Active-LessActive | Corporates-Financials | Active-LessActive | Active-LessActive |
| 2Q                       | 0.3110%           | -0.5264%              | 0.3037%           | 0.3734%           |
|                          | 20.49%            | 98.30%                | 20.44%            | 40.6%             |
| 3Q                       | 0.5121%           | -0.7987%              | 0.3733%           | 1.1941%           |
|                          | 23.41%            | 99.70%                | 39.03%            | 12.52%            |
| 4Q                       | 0.3389%           | -0.7720%              | 0.1470%           | 1.2634%           |
|                          | 41.50%            | 99.00%                | 61.68%            | 13.53%            |

Table 3 presents the differences in *timing costs* for equity issuances (A), equity buybacks (B) and bond issuances (C) separately for optimization spans of 2 quarters, 3 quarters, and 4 quarters in the upper rows. The lower rows represent the respective p-values of the Wilcoxon Mann Whitney test with alternative hypothesis *timing costs* of *Active* > *timing costs* of *LessActive* and *timing costs* of *Corporates* > *timing costs* of *Financials* (equals 1-p value of opposite alternative hypothesis, e.g.

*timing costs* of *LessActive* > *timing costs* of *Active*), respectively. *Active* (*LessActive*) represent the 50% companies with the highest (lowest) number of capital market activities of the respective type.

## **5. Conclusions**

The existence of market timing defined as trying to make use of mis-pricings in the equity and bond markets by companies has been intensively studied as part of capital market research foremost in the U.S. Likewise, the successfulness of market timing is addressed in a sizeable number of papers and is still part of an ongoing debate.

Within this research project we get insights on the timing ability and performance of German financial and corporate firms with respect to their capital market activities. For firms listed in DAX or MDAX we have considered capital market activities denominated in EUR with volumes equal or greater than EUR 100 million between January 2001 and June 2013.

We have analyzed whether financial firms – according to a higher proximity (of parts) of their business to capital markets – perform better compared to corporate firms, as well as whether firms that are more active on capital markets and thus could build up experience are superior than those that are less active. Under the precondition that firms could have varied their capital market activities with respect to timing by  $\pm 2, 3$  and 4 quarters, for each capital market activity *timing costs* as percentage loss impact for the firm were calculated.

We obtained significant differences in the *timing costs* between equity issuances, equity buybacks and bond issuances. Assuming firms could have varied their capital market activities by one year, the average *timing costs* amounts to 43.15% for equity issuances, 24.60% for equity buybacks, and 3.31% for bond issuances.

Differentiating between the financial and corporate sector, we find the group of financial firms to be less successful than the group of corporate firms when issuing both equity and bonds. Our explanation for this surprising finding is that financial firms seem to have a need or a rapid execution once they issue capital. A plausible reasoning for this prompt demand might be the satisfaction of regulatory conditions.

In addition, we get a similar observation for the group of active firms whose performance when issuing equity and bonds is inferior to that of the less active group. Again, a higher activity might be understood as higher pressure for a prompt issuance such that the potential for delays of the issuance is limited.

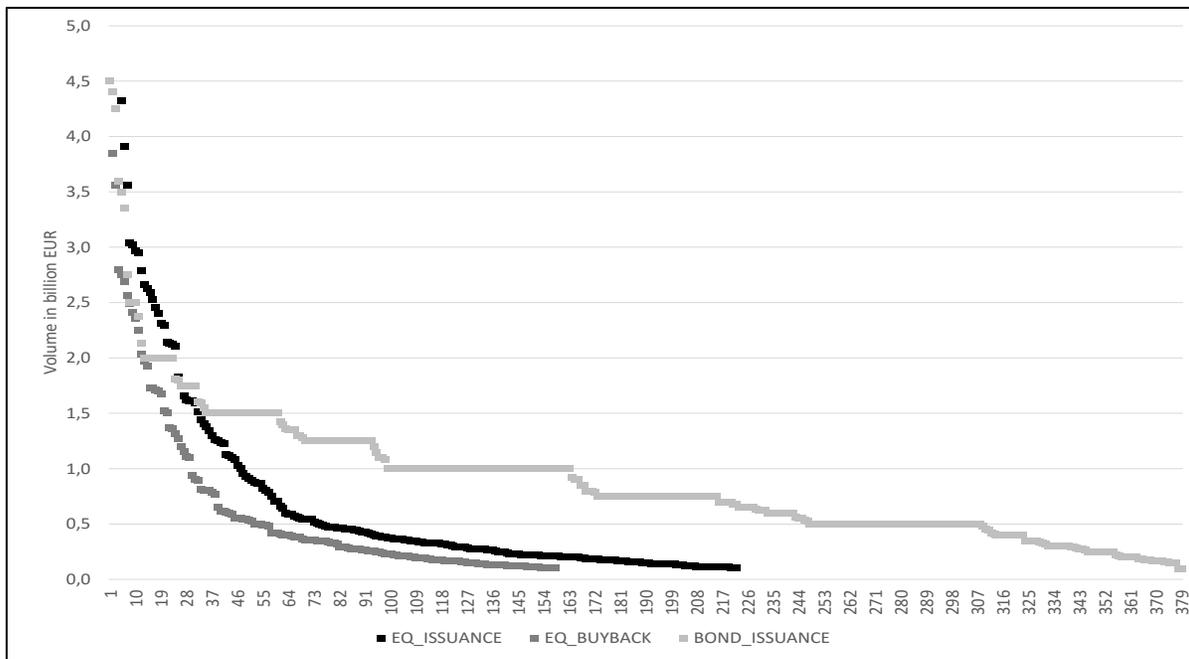
The findings, however, reverse when we consider equity buybacks. This corporate transaction differs from the equity and bond issuances in the sense that there are no exogenous frictions such as regulatory conditions or hedging objectives involved. Once funds for the buybacks are available, it is only the point in time of the transaction that matters for the firm and determines the success of it. When focusing on the success of the financial group from share repurchases, we find a better performance than that of the non-financial group. Likewise, the group of active firms is now more successful than the less active group when share buybacks are concerned.

Hence, we can conclude that firms being under pressure to carry out an issuance cannot make use of their timing skills. However, when firms have the potential to time a transaction, such as for share repurchases, the performance of both financial and active firms, who are supposed to be better skilled, is superior.

Our analyses are – due to the availability of data – based on EUR-denominated capital market activities of German firms only. Whether the depicted findings on German capital market activities would be similar for capital market activities of firms headquartered in economies with different characteristics of capital markets (e.g. the share of financing through capital markets for financial and non-financial firms, the level and structure of regulation, the central bank policy) remains space for further research.

Furthermore, the development of *timing costs* and the importance of market timing under different macroeconomic conditions is of further interest, since macroeconomic conditions impact the ability to refinance and the type of securities used by firms according to Erel, et al. (2012).

**Appendix:**



Capital market activities of German corporates and financials, 01/2001 – 06/2013

This figure presents the volume ranked bond issuances, equity issuances and equity buybacks of German firms with a minimum amount of EUR 100 million, denominated in EUR or preceding currencies from 01.01.2001 to 30.06.2013.

### **References**

- [1] Baker, Malcom, and Jeffrey Wurgler (2002). “Market Timing and Capital Structure”, *Journal of Finance*, 57(1): 1-32.
- [2] Baker, Malcom, and Jeffrey Wurgler (2012). “Behavioral Corporate Finance: An Updated Survey”, *Handbook of the Economics of Finance: Volume 2*, George M. Constantinides, Milton Harris, and Rene M. Stulz, Eds. Elsevier Press, 2012.
- [3] Billett, T. Matthew, Mark J. Flannery, Jon A. Garfinkel (2011). “Frequent issuers' influence on long-run post-issuance returns”, *Journal of Financial Economics*, 99(2): 349-364.
- [4] Damodaran, Aswath (2013). “Valuing Financial Service Firms”, *Journal of Financial Perspectives*, 1(1): 59-74.
- [5] Dittmar, Amy, and Robert Dittmar (2007). “The timing of stock repurchases”, SSRN Working Paper [Online] Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=911308](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=911308).
- [6] Dittmar, Amy, and Anjan Thakor (2007). “Why do firms issue equity?”, *Journal of Finance*, 62(1): 1-54.
- [7] Dong, Ming, Igor Loncarski, Jenke ter Horst, Chris Veld (2012). “What Drives Security Issuance Decisions: Market Timing, Pecking Order, or Both?”, *Financial Management*, 41(3): 637-663.
- [8] Eckbo, B. Espen, Ronald W. Masulis, Oyvind Norli (2000). “Seasoned public offerings: resolution of the ‘new issue puzzle’”, *Journal of Financial Economics*, 56(2): 251-291.
- [9] Elliott, William B., Johanna Koeter-Kant, Richard S. Warr (2008). “Market timing and the debt-equity choice”, *Journal of Financial Intermediation*, 17(2): 175-197.
- [10] Erel, Isil, Brandon Julio, Woojin Kim, Michael S. Weisbach (2012). “Macroeconomic conditions and capital raising”, *Review of Financial Studies*, 25(2): 341-376.
- [11] Fama, Eugene F. (1998). “Market efficiency, long-term returns, and behavioral finance”, *Journal of Financial Economics*, 49(3): 283-306.
- [12] Gaud, Philippe, Martin Hoesli, and Andre Bender (2005). “Debt-Equity Choice in Europe”, FAME Research Paper, 152.
- [13] Graham, John R., and Campbell R. Harvey (2001). “The theory and practice of corporate finance: Evidence from the field”, *Journal of Financial Economics*, 60(2-3): 187-243.
- [14] Greenwood, Robin, Samuel Hanson, and Jeremy C. Stein (2010). “A Gap-Filling Theory of Corporate Debt Maturity Choice”, *Journal of Finance*, 65(3): 993-1028.
- [15] Gubin, Aaron (2012). “What decomposing Market-to-Book ratios can tell us about firm pricing and safety”, Dissertation, University of Florida.
- [16] Henderson, Brian J., Narasimhan Jegadeesh, Michael S. Weisbach (2006). “World markets for raising new capital”, *Journal of Financial Economics*, 82 (1): 63-101.
- [17] Kayhan, Ayla, and Sheridan Titman (2007). “Firms' histories and their capital structures”, *Journal of Financial Economics*, 83(1): 1-32.
- [18] Levy, Hagit, and Ron Shalev (2016). “Bond Repurchase Objectives and the Repurchase Method Choice”, SSRN Working Paper [Online] Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1894780](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1894780).