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Determinants of Capital Market Reactions to Seasoned Equity Offers by German Corporations

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ABSTRACT

Our study provides evidence on the share price reactions to the announcement of equity issues in Germany, where capital market is characterized by institutional features distinct from the U.S. market. German seasoned equity issues yield a positive market reaction which contrasts to the significant negative abnormal returns reported for the U.S. We provide evidence that these results are due to differences in both issuing characteristics and floatation methods, and in the corporate governance and ownership structures of the two countries. Our study explains much of the empirical puzzle of different market reactions to seemingly similar events across financial markets.

Keywords: Seasoned Equity Offerings, Floatation Method, Rights Offerings, Corporate Governance, Ownership

JEL Classifications: G14, G24, G32, G35

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A series of studies on the U.S. capital market show that announcements of seasoned equity issues (SEIs) result in significant negative average abnormal returns of around -3.1 percent. (see Smith, 1986, and Eckbo and Masulis, 1995, for comprehensive surveys.)

However, studies on the announcement effects of seasoned equity issues on other financial markets do not always confirm the U.S. results. In fact, the majority of empirical studies for non-U.S. markets reports statistically significant positive average abnormal returns.[1]

In this paper, we present results of our study of the announcement effects of SEIs by German corporations. We compare our results to the evidence from other studies for German seasoned equity issues and to studies from other national markets, including the U.S.. The evidence for the German market has so far not found its way in the international surveys.[2]

Our results show that announcements of SEIs by all German companies included in our sample yield a significant positive average cumulative abnormal return of 0.60 percent in a four-day window from t_2 to t_{+1} around the announcement day t_0. Thus, our results differ considerably from the U.S. evidence. Our findings are due to differences in the types of issues and to differences in institutional characteristics. In Germany, almost all seasoned equity issues are rights issues. In the U.S., underwritten offerings predominate. However, studies of rights issues on the U.S. market still find statistically significant negative abnormal returns that are smaller in absolute terms than the negative abnormal returns for underwritten offerings .[3]

We argue that non-negative market reactions should be expected for German rights issues applying a reinterpretation of the asymmetric information model by Myers and Majluf (1984) and Eckbo and Masulis (1992) which takes into account the institutional setting of the German seasoned equity market. Further, we examine whether announcements return can be explained by models of dividend signalling, or by models that use the discount in the rights issue as a signal of firm quality. We find support for dividend signalling arguments when dividends per share are kept constant after the issue.

We also test the implications of Merton's (1987) incomplete information model by comparing the market reactions to the announcement of SEIs by both large and small German companies. The empirical evidence shows that the positive abnormal return for all companies is driven by a strong significant positive average reaction to issues by small companies, but issues by large companies show weak insignificant negative average abnormal returns.

The German market is also different in that the major German universal banks dominate the seasoned equity issue market. Companies that wish to issue seasoned equity must seek the services of at least one of the major banks and must accept a review of their financial and operating situation. For almost all issues, one of the underwriter banks is a bank that has a special lending relationship (*Hausbank)* to the issuer.[4] The absence of a *Hausbank* in the underwriting consortium would be regarded as a negative signal by other capital market participants. Because of its close relationship to the issuing companies, the *Hausbank* either has additional information or greater power to extract such information. Thus, the announcement of an equity issue conveys positive information on the results of the screening process to the market. This characteristic of the offering process resembles characteristics of private placements for which researchers find significant positive abnormal returns for U.S. companies.[5]

The corporate governance and ownership structure of the German "bank-based" (as opposed to the U.S. "market-based") financial system is another important aspect determinant of market reaction. In the U.S., most corporations are widely held, but in Germany many listed firms are still

primarily family-owned, or else are dominated by influential blockholders such as banks or investor groups.[6] A high concentration of ownership in quoted corporations can facilitate a stronger control of investment and financing decisions, which can reduce value-destroying decisions driven by the self-interest of management. As do other recent international studies on ownership and firm performance, we find that the type of dominant ownership (e.g., family, bank, or state) is more important than ownership concentration alone in explaining the effects of shareholder control.[7] Announcements of seasoned equity issues by companies that are controlled by insiders have a strong significant positive wealth effect. Issues by firms under the control of outside blockholders (e.g., financial institutions) result in less positive abnormal returns, but issues by corporations not governed by block ownership have a negative wealth effect.

This paper proceeds as follows. Section I gives an overview of the institutional characteristics of the German seasoned equity issue market. Section II briefly discusses the relevant theories and develops hypotheses for the empirical tests. Section III describes data and methodologies used to derive the empirical results in Section IV. Section V summarizes our findings and concludes.

I. Institutional Characteristics of Seasoned Equity Issues by German Corporations

We use statistical data provided by the Deutsche Bundesbank statistics for the period 1980 to 1994 to derive the sources of funds of German incorporated and unincorporated companies. Figure 1 illustrates these sources. Funds generated internally are the most important source of financing, followed by external debt. Managers arrange debt financing primarily through private debt agreements with financial institutions. The issue of marketable debt securities is only relevant for larger (mostly quoted) companies, which, for tax reasons, prefer the Euro-markets. We can infer from Figure 1 that the issue of new equity makes up only a small portion of total financing of German corporations.[8]

By far most newly issued shares are seasoned equity offers. Between 1980 and 1994, initial public offerings (IPOs) accounted for only a small part of issued shares[1], although during the past few years, the creation of new market segments such as the "Neue Markt" for high-tech companies and the "SMAX" for small caps has substantially increased the number of IPOs in Germany. (See www.exchange.de). However, because of statutory rules in the German Stock Corporation Act (*Aktiengesetz* - AktG) and the related jurisdiction, the rights issue is the preferred method used for seasoned equity offerings.

(Insert Figure 1 about here)

The AktG grants existing shareholders a pre-emptive right to newly issued shares (§ 185 (1) AktG). This right is understood as an integral feature of shareholders' rights. The law requires that in a proposal to surrender this right, the board of directors must provide specific, substantive arguments to the assembly of shareholders. The approval to surrender the right to subscribe new shares in an seasoned equity offering is granted only in exceptional circumstances (e.g., if new shares are sold to employees; for an international listing; in corporate restructuring; in specific take-over situations). Therefore, although our study concentrates on rights issues, we also examine underwritten offerings.

Since the change in legislation in 1994, a firm's board of directors now has the option to issue equity without granting pre-emptive rights to existing shareholders if the issue price does not materially deviate from the market price at the time of the issue and if the nominal amount of new equity is less than 10 percent of the outstanding nominal capital (§ 186 (3) AktG). The shareholders'

meeting must approve the issue by a majority of 75 percent of votes. However the restrictions developed in the former jurisdiction no longer apply to such issues. This option has been used by only a few German corporations up to now. Large blockholders do not want to relinquish their voting position, and therefore insist on rights offerings.

We are only aware of one issue prior to 1997, conducted by the widely held Commerzbank AG in 1995, which raised equity without granting rights.[1] More recent non-rights issues that use the exemption of § 186 (3) AktG are Dresdner Bank AG (1997), Mannesmann AG (1998), and Rheinmetall AG (1998). Linde AG (1999) uses an issue that combines rights and non-rights. In 1997, Volkswagen announced an issue that combined non-rights with a rights issue, but postponed the issue after a decline in stock prices. We also note that when management proposes to issue equity without rights, it is very likely to face fierce legal opposition by activist small shareholders.

Below, we describe a representative time sequence of events and activities in the process of a seasoned equity offer by a German corporation. This description provides the background of our research design:

(1) On the basis of internal financial planning, management discusses the decision to issue new equity in a board meeting or a meeting of a subgroup of managing directors. Information on the agenda and on the decisions of such meetings are not publicly available. Sometimes management announces in press releases or in interview statements to the public made immediately after the meeting that it plans to issue equity. These announcements usually do not contain specific terms of the issue.

(2) The managing board needs shareholder approval for any equity issue. For small or closely held companies and in very urgent situations, management might announce an extraordinary shareholders' meeting.

The German Stock Corporation Act offers a more flexible advance approval by shareholders (§ 202 AktG). Management may issue new equity out of an approved capital within a period of up to five years, for a specified maximum number of shares or nominal value that does not exceed 50 percent of existing nominal capital. Management must also abide by any other constraints laid down in the resolutions of the shareholders' meeting. Upon issuing equity, the managing board must seek approval from the supervisory board on the specific terms of the issue.[9] Information on the proposal of an advance approval or an immediate approval of new capital is available in the published agenda for the shareholders' meeting.

(3) As soon as he is authorized by a resolution of the managing board, the chief financial officer approaches the company's preferred banks to discuss the plan of the issue and ask for offers.

(4) The plans of the issue are reviewed by the banks. Because this review is based on information beyond that publicly available, the CFO will only approach banks with a special relationship to the issuing company or a high reputation of confidentiality. It is not unusual that as a result of such a review, banks ask companies to postpone their plans to issue equity until their operating and financial situation meets the minimum standards required by the banks, which are concerned about their underwriting reputation.

(5) The lead bank chosen - often a *Hausbank* - invites other banks to participate in a consortium comprising the major German banks that dominate the primary market. Typically, the consortium guarantees the sale of the issue. The banks in the consortium are required to honor the rights under the contract with the issuing company. Because the terms of the contract

between the company and the consortium of banks are not publicly available, we are not able to differentiate between rights issues with different forms of guarantees by the subscribing banks.

(6) After the final decision of the managing board on the terms of the issue, management signs the contract with the consortium of the banks. The issue is announced publicly either on the same day or the next day. The announcement includes the relevant terms of the issue. The firm prepares a prospectus if the common stock issued is more than 10 percent of common stock outstanding, or if the stock exchange requires the issuer to do so (e.g., if the last prospectus was issued a long time ago).

We use the day of the first announcement of the terms of the issue in the financial press as the announcement day, t_0.

(7) After a period of five to ten days of rights trading, the subscription period for owners of rights ends. The rights must be exercised by the last day of the rights trading period or they expire. However, only few rights actually do expire, because the German banks that are acting as custodian banks for their customers will sell the rights on the last trading day if the shareholders do not instruct the company to do otherwise. The issue price of the new shares must be paid by the subscribers to one of the banks in the consortium.

(8) The newly issued shares begin trading on the stock exchanges as soon as the shares are registered with the exchange. This usually happens immediately.

The lead bank credits the accounts of the issuing company the total value of issue (issue price times number of shares issued), less the fee negotiated for services and expenses, on a day specified in the contract. Information on the fees paid is not publicly available, since they are included as operating expenses in net income. For a rights offering, the fees charged are estimated at 4 to 5 percent of common stock issued plus a risk premium that is firm-specific and varies over time. This risk premium (typically 4 percent) is charged on the basis of the issue price that the firm raises over a range of 70 to 75 percent of the last share price. Although this range was relevant for most of our study's 1980-1994 period, it has gone down to 50 to 55 percent in recent years.

For a rare public offering, the risk premium charge is usually 4 percent of the issue size plus 1 percent of additional common stock issued. Therefore, the direct issuing costs for public offerings are higher than for rights offerings. If a large shareholder commits himself to participate in an issue, fees will be reduced substantially by the banks participating in the issue.

II. Literature Review and Hypotheses

A Signalling Models

Explanations of market reactions to equity issues often rely on models of asymmetric information. In these models, management's internal information about the prospects of the company is inferred by investors from observable management actions. Miller and Rock (1985) argue that an unexpected equity issue signals bad news, that the company has to make up a shortfall in the unobservable cash flow from operations. Since investment plans and dividends are fixed and known to investors, current cash flow is the only unobservable variable in the budget restriction. A smaller than expected current cash flow translates into a smaller value of the company. The model predicts

negative reactions to unexpected financing decisions and positive reactions to dividend or share-repurchase decisions. It does not differentiate between equity or debt issues.

The model can also explain different market reactions to nonfinancial companies and to financial institutions. Equity issues by financial institutions are considered more predictable because of capital requirements regulation, and therefore should cause a less negative reaction. Empirical studies of equity and dividend announcement effects in the U.S. market [surveyed by Allen and Michaely (1995); Eckbo and Masulis (1995)] support the implications of Miller/Rock (1985).

However, the model implies similar reactions to equity and debt financing decision that cannot be observed empirically Abnormal stock returns are insignificant for announcements of external debt financing, according to the results Mikkelson and Partch (1986). The study of German corporate bond issues by Entrup (1993) reports an insignificant average abnormal return of –0.1 percent.

Myers and Majluf (1984) provide another rationale for negative reactions to seasoned equity offerings. A management acting in the best interest of current shareholders will sell equity to new investors only when it believes that the company is overvalued. Investors recognize this incentive and when management announces an equity issue, investors negatively revalue the company.

The Myers and Majluf (1984) argument is based on the assumption that current shareholders do not participate in the issue. If current investors fully subscribe to an issue on a pro rata basis (either in a rights issue or in a public offering), the problem of a wealth transfer from current to new shareholders does not exist. In this case, we can expect a zero reaction or, if we take into account that the projects financed by the proceeds from the issue should have a positive net present value (NPV), a positive reaction if the announcements of the investing and of the financing decisions are made simultaneously.

The Myers and Majluf (1984) model is extended by Eckbo and Masulis (1992) who incorporate the possibility of a choice between different ways of floating an issue. Bøhren, Eckbo and Michalsen (1997) adapt this model to a situation in which only rights issues are feasible. Bøhren et al. argue that how companies choose to float the issue depends on two factors, the take-up of current shareholders, k, and the true type of the firm. One can determine k exogenously, but firm quality is only known to managers who are assumed to try to maximize the wealth of current shareholders. Managers will finance a project with a positive NPV if the total costs of floating an issue are less than the project NPV. Flotation costs comprise direct costs and the wealth transfer from current to new shareholders if shares are sold to new investors below their true (full information) value. Therefore, even in a rights issue there are costs to current shareholders if they sell their rights (i.e., $k < 1$). An underwriting agreement with an investment bank has the effect of reducing informational asymmetries, thus reducing the difference between the market price and the true intrinsic value of the firm. However, the market trusts only those investment banks with a good underwriter reputation, and only such banks can effectively reduce the informational asymmetries.

The Eckbo and Masulis (1992) and Bøhren, Eckbo and Michalsen (1997) argument depends on the possibility of choosing between different flotation methods (either underwritten rights or unsecured rights issue) and on the effectiveness of the underwriter's certification process. Almost all seasoned equity offers, either the issuer's *Hausbank* or one of the major German banks that dominates the primary market plays a leading role in the underwriting consortium. Thus, there is no difference in the certification process or reputation of underwriters that could be used to discriminate between low- or high-quality issuers. We expect that only high-quality companies are able to issue

new equity capital. However, there is no data available that allows us to identify different types of rights issues. This leads us to the following hypotheses:

H1:	We expect a non-negative price effect for announcements of rights issues by German corporations.

Many studies further argue that the regulatory environment of financial institutions (apart from nonfinancial firms) results in less information asymmetry between the issuing financial institution and the capital market.[10]

H2:	We expect the announcement effect to be stronger for rights issues by nonfinancial companies than for rights issues of financial institutions.

Another model that examines the choice of flotation method is presented by Heinkel and Schwartz (1986). In their study, management is concerned about the costs of a failing equity issue. To avoid a failure it has two choices. It can buy a stand-by agreement from an investment bank or set the offer price, OP, low enough to guarantee the acceptance of the rights issue without underwriting. Only „good" firms choose to buy the stand-by agreement because the investment banks' costly certification process reveals the type of the company. The model predicts that the discount $(P_{-1,i}\text{-}OP_i)/P_{-1,i}$ in a rights issue signals the quality of the issuer. The lower the discount (i.e., the closer the issue price is to the current market price), the higher the quality of the issuer.

Further, Heinkel and Schwartz (1986) argue that in a rights issue with stand-by agreement, the relative offer price is also a signal of true firm type because the investment bank itself can prevent a costly failure of the issue by insisting on a lower offer price. However, these arguments are only applicable to situations in which the offer prices are set close enough to the current market price so that there is a possibility that the equity offer might fail.

The discount in a rights issue also implies a dividend signal. If we assume that dividends per share will be constant in the periods after new shares are floated, then a rights issue will increase total dividends and the dividend yield of the company. We can determine the expected dividend increase (EDI) by the discount in the rights issue and the amount of capital raised. We can calculate the EDI from the expected value of the rights (VR) and the market price of the share before the announcement (P_{-1}):[11]

$$EDI_i = \frac{P_{-1,i}}{P_{-1,i} - VR_i} - 1 . \qquad (1)$$

where VR_i = expected value of rights of security i
$P_{-1,i}$ = market price of security i before announcement

Theoretical models predict and empirical tests yield positive capital market reaction to the announcement of dividends increases. For example, for the German market, Amihud and Murgia

(1997), Gerke, Oerke, and Sentner (1997), and Heiden (2000) report positive abnormal returns on the announcement of dividend increases. Allen and Michaely (1995) provide a comprehensive review of the theoretical literature and the empirical evidence for the US and other markets. Thus, if the market believes that the issuing company will keep its dividend per share constant, we can interpret an announcement of a rights issue as an implicit dividend announcement. Many German companies have a record of stable dividends per share after rights issues.

From the discussion above we derive the following competing hypotheses for German rights issues:

H3:	The relative offer price provides a signal to the market.
H3A:	The market interprets a positive correlation of the relative offer price and the announcement abnormal return as signalling the quality of the issuer: The higher the relative offer price the higher is the risk of the issue.
H3B:	If corporations use rights issues to signal dividends, the expected dividend increase from a rights issue should be positively correlated with market reaction.

B. Information Effects

The different amounts of information available to market participants about issuing companies might explain the different reactions to announcements of equity issues. The intuitive explanation for this possibility is that the market might react more strongly to an announcement by a company for which relatively little information is available to investors.

Merton (1987)'s asset pricing model with incomplete information provides a theoretical background for this conjecture. Investors do not have equal information about all corporations, and are assumed to invest only in those companies for which they have information on the key return characteristics. In an asset market equilibrium, companies with few investors are priced lower, which gives investors a higher expected return. An increase in the number of investors results in a positive capital market reaction because of increasing demand for the shares of the corporation.

The explanation of the neglected firm effect also assumes differences in the amount and quality of information across companies. Analysts generate different amounts of information for each company because investors' demand for information is different. To make up for the risks associated with less information, investors demand a risk premium. If investors can expect a reduction of this risk premium, there will be a positive capital market reaction.[12]

When there is an equity issue, we can expect increases in the number of shareholders, the number of analysts following this company, or both. However, data about the change in the number of investors or analysts are not available for German companies for the 1980–1994 period of our empirical study. Therefore, we test the hypothesis H 4 below by looking at the size of the issuing company. Size correlates positively with the number of analysts following the company.[13] We expect that broadening a company's shareholder base is more relevant for smaller than for larger companies. Therefore, we formulate the following hypothesis:

H4:	If equity issues are „good news", we expect the announcement effect to be negatively

correlated with the size of the corporation.
Announcements made by smaller corporations should exhibit a more positive price effect than announcements made by larger corporations.

C. Corporate Control Effects

A unique characteristic of the German "bank-based" financial system is the concentrated ownership of German companies. It is not unusual for more than 50 percent (or even 75 percent) of the voting share of a corporation to be held by a single investor or by a group of related investors in a pyramid. Therefore, separation of ownership and control is an exception rather than the rule in Germany.[14] Hypotheses on how such blockholdings affect the stock price reaction to equity issue announcements rely either on liquidity or on corporate control arguments.

According to the liquidity argument, large blockholdings narrow the investor base of a company, which causes a liquidity reduction in the shares of the corporation and puts more price pressure on the company's shares if there is an equity issue.[15] However, this argument assumes that blockholders sell their rights. If this is not the case, large blockholdings can even increase the liquidity of the company's shares because these shareholders „guarantee" a buy-up of a big portion of new shares. The evidence over time of a stable ownership pattern of blockholdings in German companies supports the finding that major shareholders sign up a new issue on a pro-rata basis. The evidence from Germany reported in Boehmer (1999) contrasts sharply to the behavior of large U.S. institutional investors, who often significantly decrease their holdings around new issues as found by Bigelli, Mehrotra, Morck, and Yu (1997).

The first corporate control argument relies on information effects. Stockholders who own large blocks have greater resources than individual investors, and are thus better able to collect and analyze information about new issues. These stockholders also have lower marginal costs per share in acquiring information, which results in more and higher quality information. Blockholders often command a dominant voting power and are usually represented on the supervisory board or the board of directors of the issuing company. Such positions allow them access to nonpublic information. They might also have a greater incentive to monitor the issuer, because a larger share of their wealth is allocated to this investment.[16] Further, if they hold a voting block of more than 25 percent, major blockholders can even cancel an issue when it is in an early planing stage. Thus, the management of a company with such a control structure will provide fewer incentives for investing in projects with negative NPV that are driven by self-interest.[17] We therefore hypothesize:

H5: We expect a more positive price effect for announcements made by controlled corporations than for announcements made by non-controlled corporations.

Large blockholdings are not homogeneous. Therefore, we distinguish between types of shareholdings. Insider control by families can give a higher degree of control because ownership might be more efficient if it is in the hands of principals. Principals might feel more committed to the firm than would outside agents such as financial institutions. Such institutions might be driven by interests other than maximizing shareholder value, especially if they also have large credit arrangements with the firm.[18]

H6:	Monitoring by large shareholders should result in positive abnormal returns on the announcement of seasoned equity issues. We expect principal(insider/family)-controlled corporation announcements to have a more positive announcement effect than agent(outsider)-controlled corporations.

III Design of the Empirical Study

Our empirical research uses the event study method.[19] This method requires that we identify the event day(s), define the abnormal returns and the explanatory variables that determine the sample selection.

A Definition of the event date

The time sequence of an equity issue by a German company described in Section I identifies several possible event dates that we can use to study market reaction to the announcement. We deliberately choose as the announcement date the day on which the financial press first reports an official announcement by the corporation or a member of the board of directors. The news report must include the relevant financial terms of the issue. Whenever the market is closed on this day, we use the next trading day as the announcement date. We do not choose earlier newspaper reports that predicted (or „speculated“) that a company will issue common stock, nor do we consider other nonspecific announcements, because such early announcement are available only for a subsample of issues. Thus, our results understate the market reactions for those companies with earlier, nonspecific announcements.

At announcement day the company might still have to seek the approval of the shareholders meeting. However, since proposals for such approvals are almost never rejected (in fact, for the period 1981 to 1990 we know of only one case in which shareholders rejected a request for issuing new equity), the valuation effects will be reflected in the stock price at the earlier announcement.

We do not use the date on which a shareholders meeting creates approved capital for a rights issue. Many corporations have a policy under which they ask for an advance approval of equity issues in the annual meeting without an intention to use this option in the near future. Thus, we cannot interpret the creation of an approved capital as an announcement of a specific rights issue.

B Sample Selection

For the period 1981 to 1990 we identify 557 completed rights issues of German corporations. We obtain our data from *Hoppenstedts Monatskurstabellen* (see Table I). Analyzing only the announcements of completed rights issues introduces a bias in the results, because cancelled offers might display different price effects. However, delaying or cancelling a rights issue after publicly announcing the financial conditions and the time schedule happens very seldom in Germany.

We could identify the announcement dates from newspaper reports only for 277 rights issues.[20] For 247 of these rights issues we have complete stock price data for the time t_{-260} until t_{+30} (our regression and investigation period), which we obtain from the *Karlsruher Kapitalmarktdatenbank, Universität Karlsruhe*. For reasons explained in the next section we

exclude another 57 rights issues. Our final sample consists of 190 rights issues. Table I shows that a larger number of issues had to be excluded in the first years of the period under study.

(Insert Table I about here)

C Definition of abnormal returns and related tests of statistical significance

We use the market model to calculate daily abnormal returns (AR_{it}). To estimate the parameters of the market model (α_i, β_i) we use data from a 230-day period starting 260 days before the announcement day t_0 (t_{-260} until t_{-31}). Our investigation period ranges from day t_{-30} until t_{+30}.

We use the FAZ index to estimate the return on the market (R_{mt}). From our preliminary sample of 247 rights issues we exclude events for which the market model estimation is not significant at the 10 percent level. We further exclude events with less than 100 trading days following Easton (1991) or Kato, Loewenstein, and Tsay (1997). Thereby, we reduce our sample by 57 events.

Excluding these 57 events does not affect our results. A Mann-Whitney U-test detects no significant differences in the abnormal returns of the 190 issues included and the 57 issues excluded from our sample.

The average abnormal return on day t relative to the announcement day across a sample of N announcements is given by:

$$\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \, .$$

(2)

These average abnormal returns are cumulated over the interval [t_c, t_d] to arrive at average cumulated abnormal returns:

$$\overline{CAR}_{[c,d]} = \sum_{t=c}^{d} \overline{AR}_t \, .$$

(3)

We use the standard parametric *t*-test and the nonparametric rank order-test proposed by Corrado (1989) to test whether mean abnormal returns are significantly different from zero. We calculate the *t*-test statistic following Brown/Warner (1985), dividing the average abnormal return $\overline{AR}_t$ by its standard deviation estimated over the 230 days in the regression period. The test statistic for day t is given by:

$$T_t^1 = \overline{AR}_t \Big/ S\left(\overline{AR}_t\right)$$

(5)

$$S(\overline{AR}_t) = \sqrt{\sum_{t=-260}^{-31} (\overline{AR}_t - \overline{\overline{AR}})^2 \; / \; 229}$$

(6)

where $\hat{S}(\overline{AR_t})$ standard deviation of abnormal returns in the regression period t_{260} to t_{31} and

$$\overline{\overline{AR}} = \frac{1}{230} \sum_{t=-260}^{-31} \overline{AR}_t$$

(7)

We calculate the test statistic of cumulated average abnormal returns for τ days by using the square-root-of-time rule:

$$T_\tau^1 = \overline{AR}_t \Big/ \left[\tau \cdot S^2(\overline{AR}_t)\right]^{0,5}$$

(8)

Corrado's (1989) rank order–statistic test is based on the ranks of the individual abnormal returns (K_{it} = rank of AR_{it}). We assign 291 ranks for each day of our regression and investigation period t_{-260} until t_{30}. We test whether the average rank in a sample of N announcements on day t is significantly different from its expected rank (in our case 146 = (291+1)/2):

$$T_t^2 = \frac{1}{N} \sum_{i=1}^{N} (K_{it} - 146) / S(\overline{K}_t)$$

(9)

Corrado (1989) calculates $S(\overline{K}_t)$, the standard deviation of the average ranks, empirically, using the sample average ranks. However, this standard deviation can also be derived theoretically:[21]

$$\mathrm{Var}(\overline{K}_t) = \sum_{i=1}^{N} \left(\frac{1}{N}\right)^2 \mathrm{Var}(K_{it}) = \frac{N}{N^2} \mathrm{Var}(K_{it}) = \frac{1}{N} \mathrm{Var}(K_{it})$$

(10)

$$\text{and } \mathrm{Var}(K_{it}) = E(K_{it}^2) - E(K_{it})^2 = \frac{1}{k}(1^2 + 2^2 + \ldots + k^2) - \left(\frac{1+k}{2}\right)^2$$

(11)

For k = 291 ranks we get Var (K_{it})=7056,67. For a day t or and for periods of τ days we calculate the (modified) rank order statistics:

$$T_t^2 = \frac{1}{N} \sum_{i=1}^{N} (K_{it} - 146) / \left[1/N \cdot \mathrm{Var}(K_{it})\right]^{0,5}$$

(12)

$$\text{and } T_\tau^2 = \frac{1}{N} \sum_{i=1}^{N} (K_{it} - 146) / \left[\tau \cdot 1/N \cdot \mathrm{Var}(K_{it})\right]^{0,5}$$

(13)

When we test our hypotheses we rely primarily on the results of nonparametric tests, because especially in our small sample – relative to U.S. event-studies - the parametric *t*-test can be heavily influenced by high abnormal returns of individual events. We use the Mann-Whitney U-statistics to test for the significance of the difference between the average abnormal returns of two samples (e.g., small and large companies). To test the significance of the correlation between two variables (e.g., between the abnormal return and the size of the corporation) we use the rank correlation test. By relying on a nonparametric test design, we need not perform further transformations of the variables.

D Definitions of Explanatory Variables and Descriptive Statistics

Table II presents descriptive statistics for the seasoned equity issues by German companies in our sample. We calculate the average issue size by multiplying the number of new shares and the offer price. The average issue is 186 million DM for nonfinancial companies and 317 million DM for financial companies. In Table II, the medians and standard deviations indicate that the absolute volume of issues differs considerably across companies.

(Insert Table II about here)

We find that the average size of the issue relative to market value of equity on the day before the announcement (t_{-1}) is much larger for nonfinancial companies (17.3 percent) than for financial companies (7.4 percent). This result implies that measured by the market value of equity, financial companies that announce rights issues are much larger than their nonfinancial counterparts. When German companies approach the primary equity markets, they do not raise their equity base by small proportions. The relative change in the number of shares (number of new shares divided by number of outstanding shares) is on average 20.5 percent for nonfinancial and 13.5 percent for financial companies.

We find that the average absolute offer prices do not differ much between nonfinancial companies (DM 268.20 per share) and for financial companies (DM 264.52 per share). The variation within both groups is high.

The average relative offer price calculated as the ratio of the offer price and the current stock price of 65.1 percent for nonfinancial companies and of 55.3 percent for financial companies. These results demonstrate that German companies issue new equity at discounts much larger than the discounts reported for U.S.issues. For stand-by right issues by public utilities Singh (1997) reports a relative offer price of 91 percent. For the German setting, such a large discount casts doubts on the relevance of the Heinkel and Schwartz (1986) argument, because the risk that an equity issue will fail appears to be almost nonexistent. The expected dividend increase (EDI) on average 20.5 percent is only slightly higher for the nonfinancial corporations.

Because we analyse announcements made by corporations over a period of ten years during which market valuation has generally risen, we define an indexed size variable as the ratio of market value of equity on the first day of the investigation period (t_{-30}) and the FAZ index on this day. We use the indexed size variable for grouping companies, based on cut-off values, into two mutually exclusive groups of small and large companies. The indexed cut-off values are different for nonfinancial companies (0.9 million DM) and for financial companies (8 million DM). This translates into absolute cut-off values of 200 DM mill. by 1981 (FAZ-index: 221.5) and of 570 DM mill. by 1990 for nonfinancial corporations.

Table III gives the results of correlating the indexed size variable with explanatory variables from Table II. There is a negative, and for nonfinancial corporations significant, correlation between size and the relative issue size and a corresponding negative correlation between the size and the relative change in the number of shares. The issuing costs require a minimum absolute issue volume that is relatively higher for smaller companies.

Our measure of risk in a rights issue (i.e., the ratio offer price to stock price), is uncorrelated with the size of the corporation. Only for nonfinancial companies do we find a significant negative correlation between indexed size and expected dividend increase.

(Insert Table III about here)

We obtain data on ownership structure from the *Hoppenstedt Saling Aktienführer* stock guide, supplemented by the *Commerzbank's Wer gehört zum Wem?* company guide. To categorize the corporations, we look only at common stocks and disregard nonvoting shares. If a corporation is controlled by another industrial corporation, we trace its ownership back through the various layers up to the top of the pyramid until we find the identity of the holding company's ultimate owner. Therefore, we do not have a group of corporations that is controlled by other nonfinancial corporations.

After adding up all reported stakes of known blockholders, we calculate a free float variable as a residual percentage. We form three groups, based on the relative number of shares held by small investors. We assign companies to the first group if a company's free float is less than 25 percent of outstanding shares, to the second if it is higher than 75 percent, and put the remaining announcements in the third group.

Our second classification is based on the type of the most influential shareholder.[22] We form two groups of announcements from corporations in which the majority (>50 percent) of common stock is owned either by a family or a financial institution. We assign a company also to one of these two groups if an investor with a share of more than 25 percent is a family or a financial institution and no other investor holds a share of more than 25 percent. There are 51 issues of family-controlled nonfinancial companies and 24 issues of corporations that are financial institution controlled. A subsample of 31 manager-controlled nonfinancial corporations comprises corporations in which small shareholders hold more than 75 percent of common stocks. A fourth group comprises 15 companies that display a mixed control structure (several different investors each with a share of more than 25 percent of common stock). Because the groups of state-controlled firms and corporations controlled by foreign corporations each comprise less than ten events, we do not discuss them here.

(Insert Table IV about here)

The evidence in Table IV demonstrates the high level of ownership concentration in German nonfinancial companies. The governance structures are not homogenous with large blockholdings dominating the nonfinancial sector whereas financial corporations are widely held or controlled by another widely held financial institution.

We try to identify cases in which the ownership structure changes at the time of the equity rights issue. By comparing the ownership structure for the year before and the year after the rights issue, we identify only 19 events (10 percent of our sample) in which a change in shareholder structure might be attributed to a passiveness in the issue. In only four cases we have positive information form the press reports that the current blockholders did not intend to participate in the issue.

IV. Empirical Results

A Abnormal Returns for Rights Issues by Nonfinancial and by Financial Companies

Table V presents the average abnormal returns for the total sample of all 190 rights issues. To take into account the uncertainty of the actual event date, we focus our discussion of the results

primarily on a four-day event period, starting at day t_{-2}. We also present the results for each individual day in the period t_2 to t_{+2}, and for different subperiods of the investigation period. The average abnormal return of all issues is close to zero for the event windows t_2 to t_1, and is not statistically significant. Only on day t_1 we can identify a small positive average abnormal return (+0.19 percent) that is almost significant at the weak 10 percent level.

(Insert Table V about here)

We observe a weak significant 1.43 percent average abnormal return during the period t_{-30} to t_{-3} that looks like the positive run-up that has been identified in earlier studies.[23] A closer look at the run up-period shows that the effect is concentrated in the t_{-30} to t_{-21} period. The effect could be due either to earlier announcements, or to information leakage during the subperiod in which the prospective underwriting banks review and discuss the plans for the issue.

Table V displays another significant abnormal return in the period t_{21} to t_{30} that might be attributable to ex-day effects. However, although Padberg (1996) reports the same result in his study of seasoned equity issues by German companies, we do not have convincing theoretical arguments to explain this factual evidence.

Figure 2 graphs the distributions of cumulative abnormal returns in the event period t_2 to t_1. Panel A shows that the average close to zero is a result of positive and negative abnormal returns. Quite a few companies experience market reactions of +/- 5 percent or more. Panels B and C of Figure 2 show that we can attribute the majority of positive abnormal returns to announcements by nonfinancial companies.

(Insert Figure 2 about here)

Tabel VI presents the mean abnormal returns separately for the nonfinancial and for the financial companies. Financial companies experience a negative mean abnormal return of -0.97 percent in the four day event window starting at day t_2 that is weak but significant according to the non-parametric test, and highly significant according to the parametric *t*-test.

(Insert Table VI about here)

From Figure 2 Panel C we can infer that the high significance of the parametric test is driven by one extreme negative abnormal return. Therefore, we can rely primarily on the results of nonparametric tests. For the nonfinancial companies, the average abnormal return is positive (+0.58 percent) but not significantly. The positive mean abnormal return (+0.49 percent) for day t_1 is significant at the 1 percent level for both the parametric and non-parametric tests. We also observe a significant positive abnormal return of 2.02 percent during the run-up period t_{-30} to t_{-3}, but only for the nonfinancial companies. Again, this effect is due primarily to reactions in the subperiod t_{-30} to t_{-21}.

The results do not reject our hypothesis H1 derived from asymmetric information models, at least for the nonfinancial companies.

The observed difference in market reactions to announcements by nonfinancial and financial supports hypothesis H2. The difference is significant only at the 10 percent level for the Mann-Whitney U-test (z=1.9059; w=5.67 percent).

Figure 3 displays the cumulative mean abnormal returns for the investigation period. From this graph it is again evident that aggregating the abnormal returns of financial and nonfinancial companies obscures the different effects of those announcements.

(Insert Figure 3 about here)

We derive our results from announcements of (underwritten) rights issues. As explained in Section I, there are only few seasoned equity issues by German companies that were offered without rights. For the period 1974 to 1989 Toussaint (1996) identified only 15 equity issues by nonfinancial companies without rights that could be used for a comparable study using our design[24]. The average abnormal return for those issues is negative (-0.65 percent) in the event period t_2 to $t_{+1,}$ but not significant. Using the non-parametric Mann-Whitney-U-test, we find that for German nonfinancial companies, the difference in mean abnormal returns for rights issues and seasoned equity offers without rights is significant at the 10 percent level.

We also look for confounding events that might have influenced the results. For the group of nonfinancial corporations, we research newspaper reports on announcements of new equity issues. For 68 out of 125 cases we are able to identify management forecasts about earnings or dividends that accompany the announcement of the rights issues. We test whether these management statements influenced the market reactions to the announcements.

(Insert Table VII about here)

Mean abnormal returns are for the four day event window starting t_2 positive (+1.08 percent) but significant only at the 10 percent level for corporations that publish an earnings or dividends announcement concurrent with the announcements of a rights issue. When no concurrent earnings or dividend announcement is made, the market reaction is less positive. Using the nonparametric Mann-Whitney-U-test, we find that the difference between the two groups is not significant.

Confounding dividend and earnings information introduce a positive bias into the mean abnormal returns to announcements of rights issues by German nonfinancial corporations. If we delete these events from the sample, the announcement of rights issues by nonfinancial companies do not have a significant positive valuation effect.

B Certification or Dividend Signalling

To discriminate between the competing arguments of dividend signaling (hypothesis H3B) and signaling the issuer's quality (hypothesis H3A) by using the discount in a rights issue, we conduct correlation analyses of the relative offer price and the expected dividend increase with the abnormal return. Table VIII presents the rank correlations for three different event windows for our sample of 129 nonfinancial corporations.

(Insert Table VIII about here)

The rank correlations with the relative offer price are positive but not significant for all three intervals. We are not inclined to interpret this small positive correlation as evidence for signaling with the offering price, as argued by Heinkel and Schwartz (1986). Relative offer prices are too low to imply a real risk of a failure of the issue (see Table III). Signalling the issuer's quality, as implied by hypothesis H3A, does not have explanatory power for the abnormal announcements returns.

As expected under H 3B, the expected dividend increase is positively correlated with the abnormal returns in all three event windows but significant only for the event window t_0 to t_1. Under the assumption of constant dividends per share, the higher the expected dividend increase implied in the rights offer, the higher the announcement returns. . This result supports the findings of a positive correlation between abnormal returns on the announcement of dividend increases and the relative dividend increase for the German market that are reported by Amihud and Murgia (1997) and Heiden (2000).

C Information Effects

Hypothesis H4 predicts that announcements of seasoned equity issues by companies for which less information is available should result in a larger abnormal return than would the announcements by companies for which there is more information. Earlier studies identify a positive correlation between size and the number of analysts following a company, and use this correlation as another proxy for the amount of available information. Following their lead, as a proxy for the amount of information we group companies according to size.

(Insert Table IX about here)

We use the indexed size variable to split our sample of 129 nonfinancial firms into a subsample of 60 large companies and a subsample of 69 small companies. Table IX reports the average abnormal returns for both subgroups. The announcements by small nonfinancial companies result in significant positive mean abnormal return in the event window t_{-2} to t_1 (1.18 percent), but the reaction to announcements by large nonfinancial companies is insignificantly negative (-0.11 percent). The mean abnormal return for the event window t_0 to t_1 is 1.47 percent and significant on the 1 percent level for the small nonfinancial firms.

Figure 4 graphs the different market reactions to the announcements of both subsamples. Small nonfinancial companies announce seasoned equity issues after a positive run-up –period, t_{30} to $t_{-3,}$ with a significant abnormal return of 3.32 percent. There is no concentration of run-up abnormal returns in subperiods before the announcement date.

(Insert Figure 4 about here)

According to the results of a Mann-Whitney U-test reported in Table X, the differences in mean abnormal returns between both groups are significant for the event windows t_0 to t_1 (at the 1 percent level) and t_2 to t_1 (at the 10 percent level). The rank correlation coefficient between the indexed size variable and the abnormal return as measured over three event windows is significant and negative. The highest level of significance comes at the interval t_0 to t_1.

(Insert Table X about here)

Our results confirm related findings from other studies on German equity issues. Trautmann and Ehrenberg (1996) group their sample by the membership of the company in an stock index. They form a DAX-30 group that comprises the largest publicly traded companies, a DAX-100 group of mid-cap companies, and a CDAX group of small-cap companies. Announcements by companies of the DAX-30 group result in insignificant and negative mean abnormal returns. Announcements by DAX-100 and CDAX companies result in significant positive abnormal returns

of 0.50 percent and 0.38 percent. However, in their study based on the parametric Gauss-test on the differences of the means, the differences between the groups are not significant.

German shares are traded in different market segments that require companies to present different levels of information to the public. Corporations that are traded in the most liquid market segment of continuous trading (*amtlicher variabler Handel*) must fulfil the highest reporting requirements, followed by firms in the market segment with only one auction per day (*amtlicher Kassahandel*), and the remaining listed companies (*nicht amtlicher Handel*).

Padberg (1996) uses the market segment as a proxy for the information available about a company. Stocks that are traded in the more liquid market segment show smaller abnormal returns on the announcements. Padberg (1996) also finds a significant positive correlation between size (market value of equity) and the stock price reaction.

Other studies also find significant size effects on financing decisions by German companies. For example, Gebhardt and Entrup (1993) and Entrup (1995) report higher significant positive abnormal returns for announcements of debt with equity warrants of smaller firms. . In a study of the announcement effects of stock dividends by German companies, Gebhardt, Entrup and Heiden (1994) also identify significantly higher positive abnormal returns for smaller listed companies. Thus, the argument of our hypothesis H4 appears to be valid beyond the results of this study of announcements of seasoned equity issues.

D Corporate Control Effects

We begin testing for corporate control effects by looking at announcements of rights issues by corporations with a different free float. Table XI displays the results for a subsample of 28 controlled nonfinancial companies and 18 noncontrolled nonfinancial companies.

We find positive average abnormal returns for the group of controlled nonfinancial corporation on days t_0 and t_1. In this interval, the average abnormal return is 1.48 percent and significant at the 10 percent level using the non-parametric Corrado statistics. For the sample of noncontrolled companies, the mean abnormal return is insignificantly negative and not significant for this shorter event period. When we use the Mann-Whitney U-test, the differences between the abnormal returns in both samples are not significant for our event windows.

(Insert Table XI about here)

We further correlate the free float variable with the abnormal return for all 129 nonfinancial companies. For all three event periods the rank correlation coefficients are negative but not significant. The results provide only weak support for our hypothesis H5.

We further analyze the effects of different corporate control structures by forming four subsamples. The subsamples comprise 51 family-controlled companies, 24 financial institution-controlled, 31 manager-controlled, and of 15 nonfinancial companies with a mixed control structure. For the largest subsample of family-controlled nonfinancial companies, we find a large positive average abnormal return for the event period t_0 to t_1 of +1.73 percent, which is significant at the 1 percent level. Family-controlled companies announce equity issues after a significant positive abnormal return (+2.72 percent) in the run-up –period, t_{30} to t_{-3}. For the subsample of 24 companies controlled by financial institutions, we also observe significant positive abnormal returns of 0.98 percent for the event period t_0 to t_1. For the subsample of 31 manager-controlled companies

we find a significant negative abnormal return of -0.71 percent for the event window t_0 to t_1 after a run-up period of large positive abnormal returns (+ 3.89 percent). For the fourth group of 15 nonfinancial companies with mixed control exercised by several large shareholders, we detect no meaningful pattern of abnormal returns.

(Insert Table XII about here)

Table XIII presents the results of tests on the differences between the abnormal returns of subsample companies with different control structures. The Mann-Whitney-U-Test shows highly significant differences between manager-controlled and both family- and financial institution-controlled corporations for the event window t_0 to t_1. These differences support our hypothesis H6, that monitoring by large shareholders positively affects the announcement returns of equity rights issues, and that this effect will be greater for insider control by families than for agent control by financial institutions.

(Insert Table XIII about here)

Our above results also provide an interesting interpretation of the differences between the abnormal returns of financial institutions and of nonfinancial corporations. All issuers but one in the group of financial institutions are manager-controlled. The negative abnormal returns of the manager-controlled financial institutions do not differ for the announcement period from those of manager-controlled nonfinancial companies.

However, there is a difference in the abnormal returns of the run-up period: The cumulative abnormal return for the period t_{30} to t_3 for financial companies is not significant and close to zero, but the manager-controlled nonfinancial companies show a highly significant +3.89 run-up period abnormal performance.

Thus, the observable differences in market reactions are not necessarily industry-specific. Instead, the different market reactions could be attributable to the specific control structure of financial and nonfinancial companies.

V. Conclusion

The analysis and results of our study explain much of the empirical puzzle of a significant average negative stock price reaction in the U.S. capital market, and nonnegative announcement effects in Germany (and in some other countries). Our theoretical reasoning and our results demonstrate that market reactions to seasoned equity issues are not homogeneous. They differ considerably not only across countries but also within countries.

We find that the Merton (1987) asset pricing model with incomplete information provides a rationale for the observed significant difference of abnormal returns for rights issues of large and small nonfinancial German companies: Although the average abnormal return for large nonfinancial companies is insignificant and slightly negative, the results for small nonfinancial companies is significant and positive on announcement. This observation is consistent with the results of other studies on the market reactions to announcements of dividends, stock dividends, and the issuance of bonds with detachable warrants.

Although a widely dispersed ownership is often the rule in the U.S., it is the exception in Continental Europe. Many German corporations have large controlling blockholders such as families or financial institutions.

In both Germany and the U.S., companies with widely held ownership often experience a negative market reaction. Such a reaction is – not unexpectedly – less pronounced in Germany because of the different structure in the seasoned equity issues market where the dominant large banks perform a critical review of the operating and financial situation of prospective issuers. This review is often based also on nonpublic information available from a closer Hausbank relationship.

For closely held companies with large blockholdings controlled by families our results confirm the prediction that principal- or insider-controlled companies display significantly higher and positive share price reactions than do the manager-controlled nonfinancial companies. The market reaction to announcements by nonfinancial companies that are controlled by financial institutions ("agent controlled") is less positive but again significantly higher compared to manager-controlled companies. For manager-controlled companies we find a significant and negative abnormal performance after a run-up period with a high and significant abnormal return.

We find a significant and negative abnormal return of -0.58 percent for announcements by German financial institutions. Nonfinancial companies display an insignificant positive market reaction of +0.58 percent. Therefore we conjecture that the differences in share price reactions are not necessarily due to financial industry-specific factors, but to the control structure of financial companies that generally are widely held companies.

Thus, we can trace the observed of market reactions in different countries back to differences in corporate governance characteristics. This aspect of our study could be confirmed by replications of our research design. Future research could use data on comparable events from different markets (most notably the U.S. market), or more generally by comparative studies based on the same methodology and comparable data.

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Figures

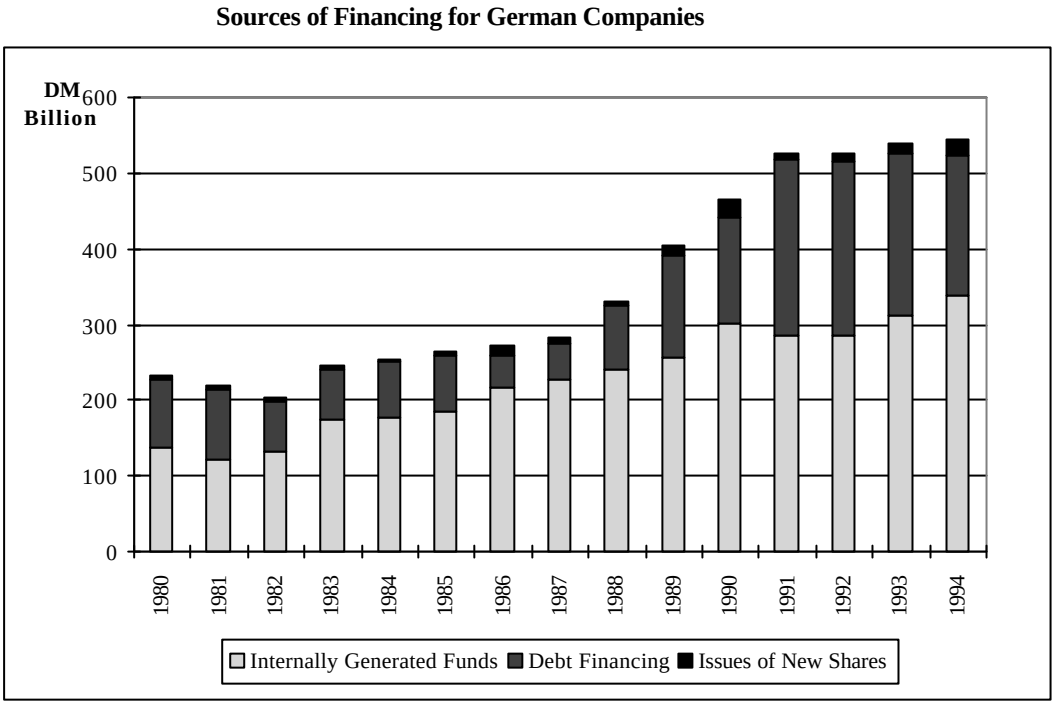
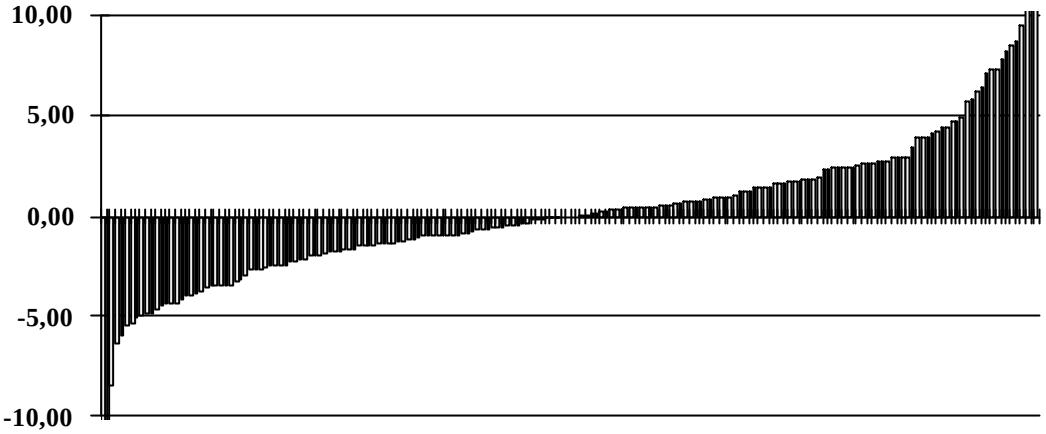


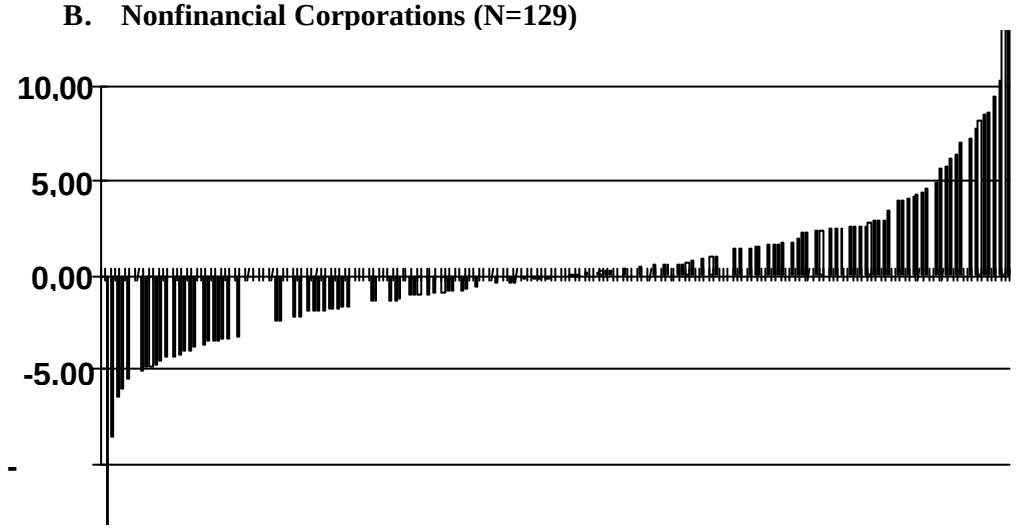
Figure 1. Aggregate source of funds of German companies for the years 1980 to 1994. Statistics according to the Deutsche Bundesbank. Total sources of funds in DM billion further subdivided into internally generated funds, debt financing and issues of new shares.

Distribution of Abnormal Returns

A. All Announcements (N=190)



B. Nonfinancial Corporations (N=129)



C. Financial Corporations (N=61)

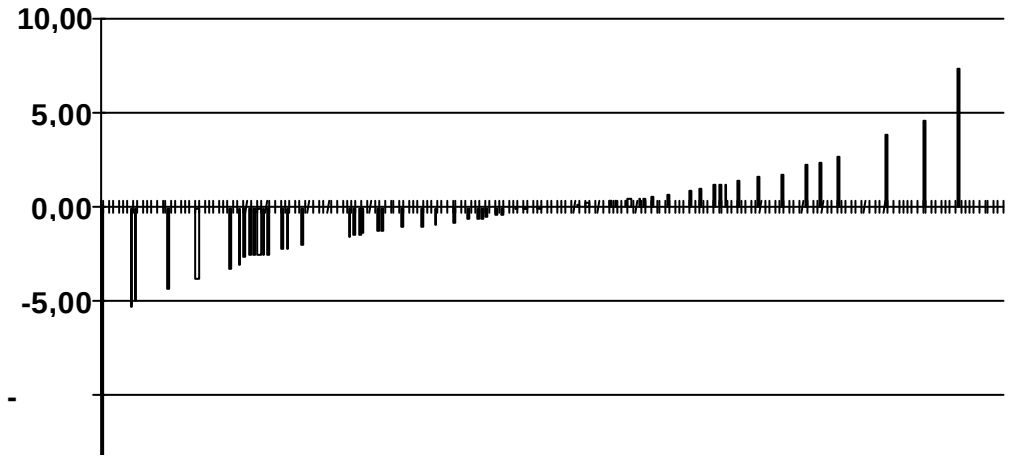


Figure 2. Distribution of Abnormal Returns in the Interval t_2 to t_1 in percent. Panel A displays the distribution of abnormal returns of the full sample (n=190), Panel B the distribution of abnormal retunrs in the subsample of nonfin-ancial companies (n=129), Panel C the distribution of abnormal returns in the subsample of financial companies (n=61).

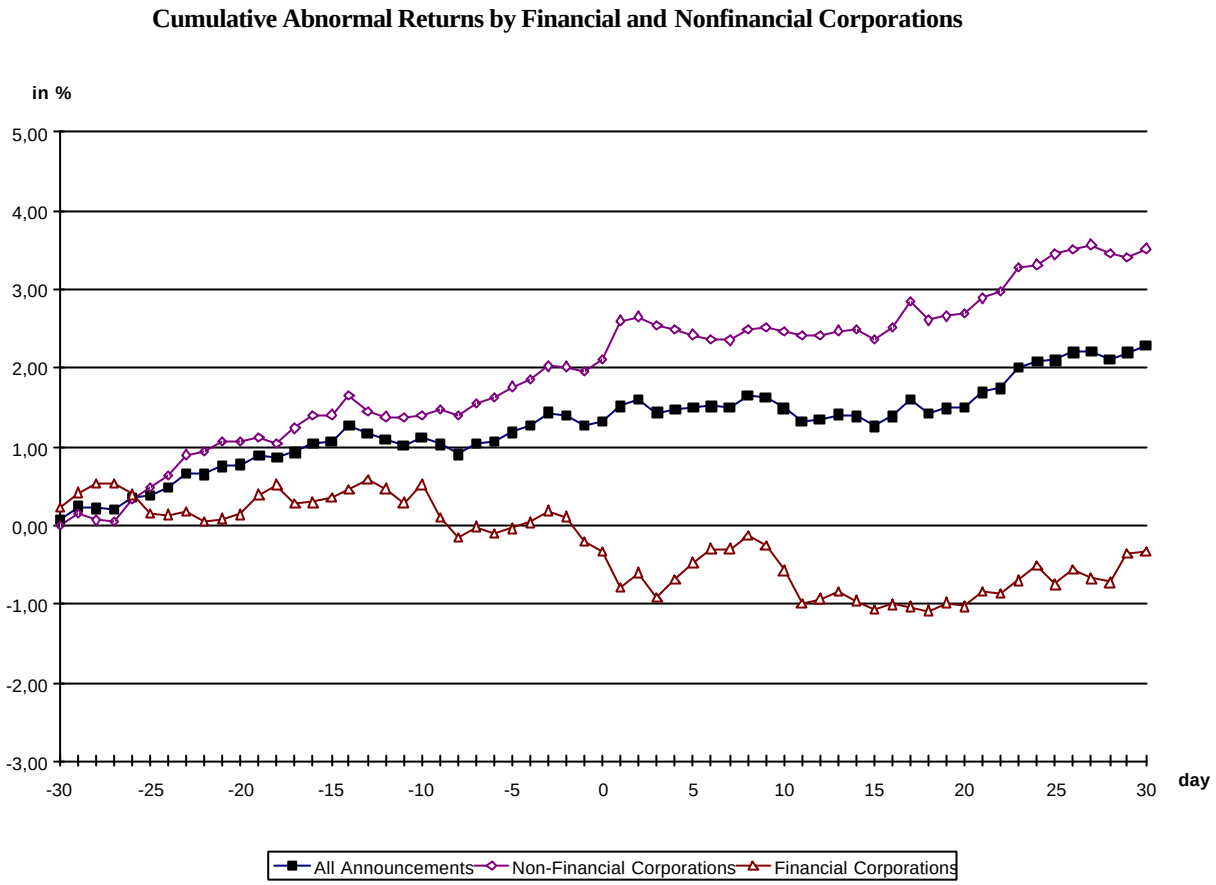


Figure 2. Cumulative Abnormal Returns for Announcements of Seasoned Equity Issues (SEI) by Financial and Nonfinancial Corporations. The graph shows the cumulative abnormal returns for each day over the period from minus 30 to plus 30 days around the announcement day for all events (n=190), the subsample of nonfinancial corporations (n=129) and the subsample of financial corporations (n=61).

Cumulative Abnormal Returns by Small and Large Nonfinancial Corporations

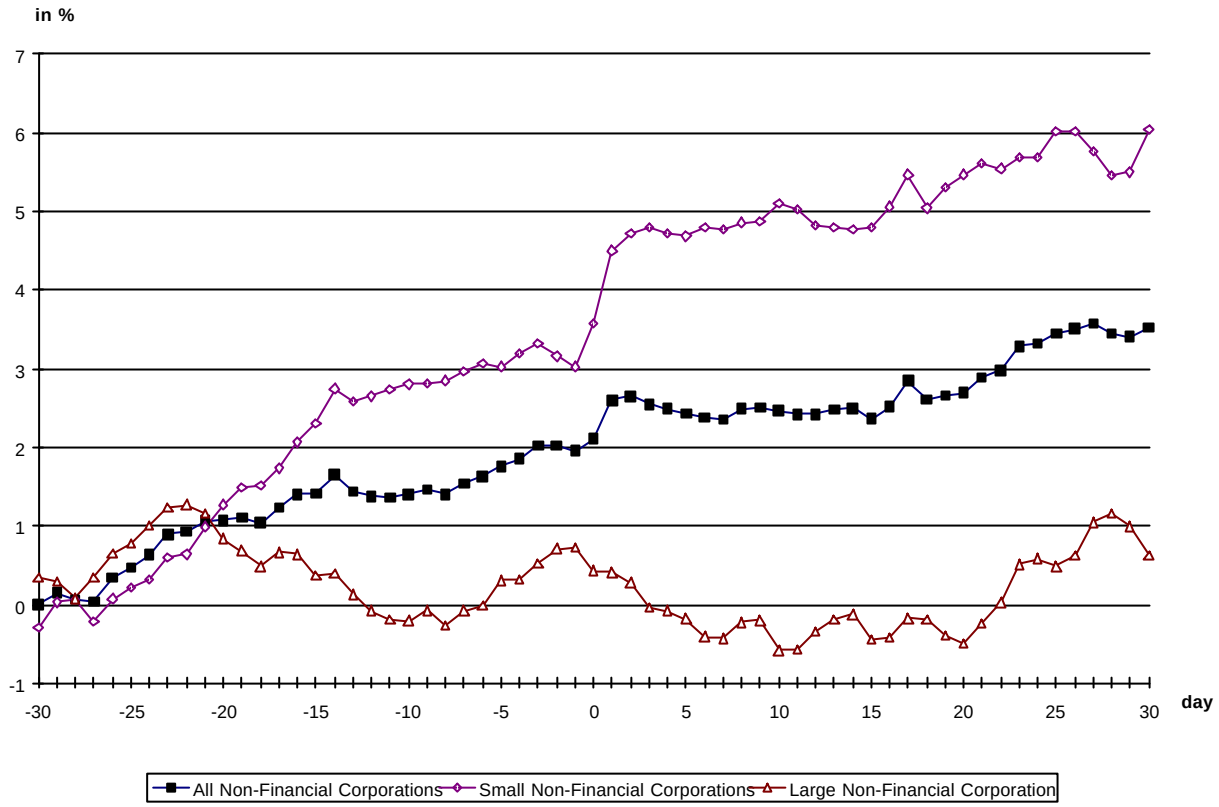


Figure 3. Cumulative Abnormal Returns for Announcements of Seasoned Equity Issues (SEI) by Large and Small Nonfinancial Corporations. The graph shows the cumulative abnormal returns for each day over the period from minus 30 to plus 30 days around the announcement day for all events (n=190), the subsample of small nonfinancial corporations (n=69) and the subsample of large financial corporations (n=60).

Tables

Table I

Rights Issues by German Corporations

The first row of table I displays the total yearly number of right issues obtained from the *Hoppensteds Monatskurstabellen* for the period between 1981 and 1990. The second row lists the number of issues included in our study. The selection criteria were the ability to identify the announcement date from the newspaper reports, the availability of complete stock data, the market model estimation to be significant at least at the 10 percent level and more than 100 days of stock trading.

	81	82	83	84	85	86	87	88	89	90	81-90
Rights Issues	42	43	44	45	46	67	41	42	88	100	557
Issues included in the study	11	8	10	9	16	25	14	19	36	42	190

Table II

Descriptive Statistics

Table II displays descriptive statistics for the seasoned equity issues by German corporations in our sample, subdivided into nonfinancial corporations (n=129) and financial corporations (n=61). Issue size is calculated by multiplying the number of new shares by the offer price. Issue size/market value of equity is the number of new shares multiplied by the offer price and divided by the market value of equity on the day before the announcement. The absolute offer price is the price at which the new shares are issued and the relative offer price is the price at which the new shares are issued divided by the market value of equity on the day before the announcement. The expected dividend increase (EDI) is calculated from the expected value of the rights (VR) and the market price of the share one day before the announcement (P_{-1}) as $EDI_I = (P_{-1,i}/P_{-1,i} - VR_i) - 1$, where VR_i is the expected value of rights of security i and $P_{-1,i}$ is the market price of the security i on day before the announcement. The relative change in the number of shares is the number of new shares divided by the number of outstanding shares. Size is the market value of equity on the first day of investigation period t_{-30}. Indexed size is the ratio of market value of equity on the first day of investigation period t_{-30} and the FAZ index on this date. Mean is the arithmetic mean of the distribution, median the median of the distribution and σ the standard deviation of the distribution.

	Nonfinancial Corporations (n = 129)			Financial Corporations (n = 61)		
	Mean	Median	σ	Mean	Median	σ
Issue size (DM thousand)	186,025	60,000	323,313	317,328	162,500	377,885
Issue size / market value of equity	17.26%	13.53%	15.5%	7.42%	7.67%	4.2%
Absolute offer price (DM)	264.52	220.00	203.31	268.20	250.00	166.34
Relative offer price	65.06%	67.60%	16.6%	55.32%	61.90%	24.1%
Expected Dividend Increase (EDI)	6.16%	4.12%	6.1%	5.88%	3.75%	6.4%
Relative change in the number of shares	20.5%	20.0%	12.0%	13.5%	11.1%	7.9%
Size	3,943,054	828,520	9,148,805	12,235,632	7,729,882	14,731,042
Indexed size	2,054,098	431,000	5,330,899	6,431,356	2,368,117	9,072,931

Table III

Correlation between Indexed Size of the Issuing Corporation and Various Descriptive Measures of the Financial Terms of Rights Issues

r is the rank correlation coefficient between the indexed size variable and the financial terms of the equity issue. Indexed size is market value of equity divided by the FAZ-index on day t_{-30}. Issue size/market value of equity is the number of new shares multiplied by the offer price and divided by the market value of equity on the day before the announcement. The relative offer price is the price at which the new shares are issued divided by the market value of equity on the day before the announcement. The expected dividend increase (EDI) is calculated from the expected value of the rights (VR) and the market price of the share one day before the announcement (P_{-1}) as $EDI_I = (P_{-1,i}/P_{-1,i} - VR_i) - 1$, where VR_i is the expected value of rights of security i and $P_{-1,i}$ is the market price of the security i on day before the announcement. The relative change in the number of shares is the number of new shares divided by the number of outstanding shares. The null hypothesis of no correlation is rejected with the probability w for the type I error.

Rank Correlation of Indexed Size with:	Nonfinancial Corporations (n=129)		Financial Corporations (n=61)	
Issue size / market value of equity	**r = -0.4551**	**w < 0.1%**	r = -0.1736	w = 18.1%
Relative offer price	r = 0.0047	w = 95.8%	r = 0.1711	w = 18.7%
Expected Dividend Increase	**r = -0.2174**	**w = 1.3%**	r = -0.2046	w = 11.4%
Relative change in the number of shares	**r = -0.3525**	**w < 0.1%**	**r = -0.4429**	**w < 0.1%**

Table IV

Descriptive Statistics of Control Classifications

Table IV provides descriptive statistics of the control classifications, subdivided into nonfinancial corporations (n=129) and financial corporations (n=61). Free Float (x_i) is the percentage of stock hold by small shareholders and is calculated as the residual after adding up all known large shareholders reported on the *Hoppenstedt Saling Aktienführer*. Three Free Float Groups are formed based on the relative number of shares held by small shareholders (x_i). Companies are assigned to the first group if the free float is less than 25 percent ($x_i \leq 25\%$), in the second group if free float is more than 75% ($x_i \geq 75\%$) and a final group in which the remaining companies are grouped ($25\% \leq x_i \leq 75\%$). Six Location of Control Groups are formed. Family controlled are those corporations in which the majority of shares (>50 percent) are held by a family or if a family holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Financial Institution controlled are those corporations in which the majority of shares (>50 percent) are held by a financial institution or if a financial institution holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Manager-controlled corporations comprises corporations in which small shareholders hold more than 75 percent of common stocks. State controlled are those corporations in which the majority of shares (>50 percent) are held by the state or if the state holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Foreign parent controlled are those corporations in which the majority of shares (>50 percent) are held by a foreign parent company or individual or if a foreign parent company or individual holds between 25 and 50 percent and there is no other investor holding more than 25 percent. In Mixed controlled corporations several different investors each with a share of more than 25 percent of common stock are present.

	Nonfinancial Corporations (n = 129)			Financial Corporations (n = 61)		
Free Float (x_i)	Mean	Median	σ	Mean	Median	σ
	0.467	0.490	0.258	0,644	0.805	0.386
Free Float Groups	$x_i \leq 25\%$	$25\% \leq x_i \leq 75\%$	$x_i \geq 75\%$	$x_i \leq 25\%$	$25\% \leq x_i \leq 75\%$	$x_i \geq 75\%$
	28	83	18	13	10	38
Location of Control Groups						
Family controlled	51			4		
Financial Institution controlled	24			0		
Manager controlled	31			53		
State controlled	4			1		
Foreign parent controlled	4			3		
Mixed controlled	15			0		

Table V

Mean Abnormal Returns for Announcements of Rights Issues by German Corporations

Table V displays mean abnormal returns in percent, *t*-statistics, the percentage of negative abnormal returns and the Corrado-statistics in various periods and on selected days around the announcement date of rights issues by German corporations (n=190).

Day or Interval	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics
t_{-30} to t_{-3}	1.43	2.29*	44.74%	1.77+
t_{-30} to t_{-21}	0.75	2.01*	45.79%	1.73+
t_{-20} to t_{-11}	0.27	0.73	51.58%	0.65
t_{-10} to t_{-3}	0.41	1.23	52.11%	0.64
t_{-2}	-0.03	-0.23	57.89%	-1.28
t_{-1}	-0.14	-1.20	52.11%	0.06
t_0	0.06	0.52	57.37%	-1.16
t_1	0.19	1.60	44.21%	1.63
t_2	0.09	0.79	45.79%	1.46
t_{-2} to t_1	0.08	0.35	51.05%	-0.38
t_{-1} to t_0	-0.08	-0.48	56.32%	-0.78
t_0 to t_1	0.25	1.50	48.42%	0.33
t_2 to t_{10}	-0.03	-0.07	51.05%	-0.58
t_{11} to t_{20}	0.01	0.02	58.95%	-0.02
t_{21} to t_{30}	0.79	2.11*	45.26%	2.06*
t_2 to t_{30}	0.77	1.21	48.42%	0.87

+/ */ ** Reject the null hypothesis that the mean (cumulative) abnormal return is zero with the probability of type I error less than or equal to 0.1/ 0.05/ 0.01.

Table VI

Mean Abnormal Returns for Announcements by Nonfinancial and Financial Corporations

Table VI displays mean abnormal returns in percent, *t*-statistics, the percentage of negative abnormal returns and the Corrado-statistics in various periods around the announcement date of rights issues by nonfinancial corporations (n=129) and financial corporations (n=61). The analysed periods are the run-up period t_{-30} to t_{-3}, the three investigation periods t_{-2} to t_1; t_{-1} to t_0 and t_0 to t_1 and the post-announcement period t_2 to t_{30}.

	Nonfinancial Companies (n=129)				Financial Companies (n=61)			
Day or Interval	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics
t_{-30} to t_{-3}	2.02	**2.58****	43.41%	**2.12***	0.19	0.20	47.54%	0.03
t_{-2} to t_1	0.58	**1.95**$^+$	46.51%	0.77	-0.97	**-2.71****	60.66%	**-1.79**$^+$
t_{-1} to t_0	0.09	0.44	55.04%	-0.19	-0.44	**-1.76**$^+$	59.02%	-1.10
t_0 to t_1	0.64	**3.06****	46.51%	1.56	-0.58	**-2.28***	52.46%	**-1.68**$^+$
t_2 to t_{30}	0.92	1.15	48.06%	0.94	0.45	0.47	49.18%	0.18

$^+$/ */ ** Reject the null hypothesis that the mean (cumulative) abnormal return is zero with the probability of type I error less than or equal to 0.1/ 0.05/ 0.01.

Table VII

Abnormal Returns for Rights Issues of Nonfinancial Corporations: Subsamples With and Without Concurrent Earnings or Dividend Information

We report mean (cumulative) abnormal returns and Corrado-statistics (in branches) for the subgroup of corporations with no concurrent earnings or dividend information (n=57) and the subgroup of corporations with concurrent earnings or dividend information (n=68). The non-parametric Mann-Whitney-U-statistics test for a significant difference between abnormal returns in both subgroups.

Abnormal Return in the interval	No Concurrent Earnings or Dividend Information (n=57)		With Concurrent Earnings or Dividend Information (n=68)		Mann-Whitney-U-Test
t_{-2} to t_1	0.18	(-0.32)	**1.08**	**(1.67$^+$)**	Z = -1.06
t_{-1} to t_0	**-0.38**	**(-1.67$^+$)**	**0.72**	**(1.92$^+$)**	**Z = -2.40***
t_0 to t_1	0.46	(0.47)	**0.82**	**(1.86$^+$)**	Z = -0.54

$^+$/ */ ** Reject the null hypothesis with the probability of type I error of less than or equal to 0.1/ 0.05/ 0.01 percent according to Z-statistics.

Table VIII

Correlation of Relative Offer Price and Abnormal Announcement Return for German Rights Issues by Nonfinancial Companies

r is the rank correlation coefficient between the relative offer price and the expected dividend increase with the abnormal return in the three investigation periods t_{-2} to t_1; t_{-1} to t_0 and t_0 to t_1. The relative offer price is the price at which the new shares are issued divided by the market value of equity on the day before the announcement. The expected dividend increase (EDI) is calculated from the expected value of the rights (VR) and the market price of the share one day before the announcement (P_{-1}) as $EDI_I = (P_{-1,i}/P_{-1,i} - VR_i) - 1$, where VR_i is the expected value of rights of security i and $P_{-1,i}$ is the market price of the security i on day before the announcement. Reject the null hypothesis of no correlation with the probability w of type I error.

Rank Correlation Coefficient between the relative offer price and the abnormal return in the interval		
t_{-2} to t_1	t_{-1} to t_0	t_0 to t_1
r = 0.070; w = 43.3%	r = 0.104; w = 24.1%	r = 0.061; w = 49.5%

Rank Correlation Coefficient between the expected dividend increase and the abnormal return in the interval		
t_{-2} to t_1	t_{-1} to t_0	t_0 to t_1
r = 0.118; w = 18.2%	r = 0.137; w = 12.1%	**r = 0.249; w = 0.4%**

Table IX

Mean Abnormal Returns for Announcements of Rights Issues by Large and Small Nonfinancial Corporations

Table IX displays mean abnormal returns in percent, *t*-statistics, the percentage of negative abnormal returns and the Corrado-statistics in various periods around the announcement date of rights issues by small nonfinancial corporations (n=69) and large nonfinancial corporations (n=60). The analysed periods are the run-up period t_{-30} to t_{-3}, the three investigation periods t_{-2} to t_1; t_{-1} to t_0 and t_0 to t_1 and the post-announcement period t_2 to t_{30}.

	Small Nonfinancial Corporations (n=69)				Large Nonfinancial Corporations (n=60)			
Day or Interval	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics
t_{-30} to t_{-3}	3.32	**2.91****	39.13%	**2.53***	0.53	0.52	48.33%	0.40
t_{-2} to t_1	1.18	**2.73****	42.03%	**2.42***	-0.11	-0.30	51.67%	-1.46
t_{-1} to t_0	0.41	1.36	50.72%	1.13	-0.28	-1.03	60.00%	-1.49
t_0 to t_1	1.47	**4.83****	37.68%	**3.61****	-0.32	-1.18	56.67%	-1.59
t_2 to t_{30}	1.54	1.32	47.83%	0.49	0.21	0.20	48.33%	0.85

+/ */ ** Reject the null hypothesis that the mean (cumulative) abnormal return is zero with the probability of type I error less than or equal to 0.1/ 0.05/ 0.01.

Table X

Size and Capital Market Reaction on the Announcement of Seasoned Equity Issues by German Nonfinancial Corporations

Z is the non-parametric Mann-Whitney-U-statistics when comparing the abnormal returns in the subgroup of small nonfinancial corporations (n=69) and large (n=60) nonfinancial corporations in the three periods t_{-2} to t_1; t_{-1} to t_0 and t_0 to t_1. r is the rank correlation coefficient between the indexed size variable and the abnormal return. Size is the market value of equity on the first day of investigation period t_{-30}. Indexed size is the ratio of market value of equity on the first day of investigation period t_{30} and the FAZ index on this date. Reject the null hypothesis of no correlation with the probability w of type I error.

Mann-Whitney-U-Test

on different abnormal returns between small (n=69) and large (n=60) nonfinancial corporations in the interval

t_{-2} to t_1	t_{-1} to t_0	t_0 to t_1
Z = -1.7093; w = 8.74%	Z = -1.0955; w = 27.33%	**Z = -3.3006; w = 0.1%**

Rank Correlation Coefficient

between the indexed size variable and the abnormal return in the interval

t_{-2} to t_1	t_{-1} to t_0	t_0 to t_1
r = -0.2151; w = 1.4%	**r = -0.1516; w = 8.6%**	**r = -0.3353; w < 0.1%**

Table XI

Abnormal Returns for Controlled and Non-Controlled Nonfinancial Companies

Table XI displays mean abnormal returns in percent, *t*-statistics, the percentage of negative abnormal returns and the Corrado-statistics in various periods around the announcement date of rights issues by controlled nonfinancial corporations (n=28) and non-controlled nonfinancial corporations (n=18). The analysed periods are the run-up period t_{-30} to t_{-3}, the three investigation periods t_{-2} to t_1; t_{-1} to t_0 and t_0 to t_1 and the post-announcement period t_2 to t_{30}. Companies are assigned to the controlled subgroup if the free float is less than 25 percent and in the non-controlled group if free float is more than 75 percent.

	Controlled Nonfinancial Companies (n=28)				Non-Controlled Nonfinancial Companies (n=18)			
Day or Interval	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics
t_{-30} to t_{-3}	0.39	0.21	46.43%	0.54	1.00	0.59	61.11%	0.51
t_{-2} to t_1	1.17	**1.70**$^{+}$	53.57%	1.34	0.00	-0.01	61.11%	-1.41
t_{-1} to t_0	0.53	1.10	50.00%	0.84	-0.48	-1.05	61.11%	-0.95
t_0 to t_1	1.48	**3.05****	46.43%	**1.67**$^{+}$	-0.28	-0.62	55.56%	-1.54
t_2 to t_{30}	2.36	1.28	35.71%	1.31	-1.95	-1.13	61.11%	-0.55

$^{+}$/ */ ** Reject the null hypothesis that the mean (cumulative) abnormal return is zero with the probability of type I error less than or equal to 0.1/ 0.05/ 0.01.

Table XII

Mean Abnormal Returns for Subsamples of Corporations with Different Control Structures

Table XII displays mean abnormal returns in percent, *t*-statistics, the percentage of negative abnormal returns and the Corrado-statistics in various periods around the announcement date of rights issues by Family controlled nonfinancial companies (n=51), Financial institution controlled nonfinancial corporations (n=24), Manager controlled nonfinancial companies (n=31) and nonfinancial companies with a Mixed control structure (n=15). The analysed periods are the run-up period t_{-30} to t_{-3}, the three investigation periods t_{-2} to t_1; t_{-1} to t_0 and t_0 to t_1 and the post-announcement period t_2 to t_{30}. Family controlled are those corporations in which the majority of shares (>50 percent) are held by a family or if a family holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Financial Institution controlled are those corporations in which the majority of shares (>50 percent) are held by a financial institution or if a financial institution holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Manager-controlled corporations comprises corporations in which small shareholders hold more than 75 percent of common stocks. In Mixed controlled corporations several different investors each with a share of more than 25 percent of common stock are present.

	Family Controlled Nonfinancial Companies (n=51)				Financial Institution Controlled Nonfinancial Companies (n=24)			
Day or Interval	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics
t_{-30} to t_{-3}	2.72	**2.01***	37.25%	**2.08***	-1.61	-1.10	58.33%	-1.18
t_{-2} to t_1	1.31	**2.57****	41.18%	1.25	1.02	1.85	25.00%	**2.16***
t_{-1} to t_0	0.70	**1.95**$^+$	47.06%	0.49	-0.18	-0.46	54.17%	0.26
t_0 to t_1	1.73	**4.80****	39.22%	**2.73****	0.98	**2.52***	33.33%	**2.55***
t_2 to t_{30}	0.67	0.49	54.90%	-0.15	0.35	0.24	45.83%	0.31

	Manager Controlled Nonfinancial Companies (n=31)				Nonfinancial Companies with Mixed Control Structures (n=15)			
Day or Interval	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics	Mean Abnormal Returns (%)	*t*-statistics	Percentage of AR negative	Corrado-statistics
t_{-30} to t_{-3}	3.89	**2.72****	48.39%	**1.95**$^+$	2.31	1.03	33.33%	0.65
t_{-2} to t_1	-0.20	-0.37	54.84%	-1.10	-0.64	-0.76	73.33%	-0.79
t_{-1} to t_0	-0.50	-1.30	64.52%	-0.80	-0.12	-0.21	66.67%	-0.20
t_0 to t_1	-0.71	**-1.86**$^+$	58.06%	**-2.19***	-0.21	-0.35	60.00%	0.01
t_2 to t_{30}	-0.06	-0.04	51.61%	0.12	3.31	1.46	33.33%	1.46

$^+$/ */ ** Reject the null hypothesis that the mean (cumulative) abnormal return is zero with the probability of type I error less than or equal to 0.1/ 0.05/ 0.01.

Table XIII

Differences in Announcement Returns between German Nonfinancial Corporations with Different Control Structures

Z is the non-parametric Mann-Whitney-U-statistics when comparing the abnormal returns in the subgroups of manager controlled corporations (n=31), family controlled corporations (n=51) and financial institution controlled corporations (n=24). Family controlled are those corporations in which the majority of shares (>50 percent) are held by a family or if a family holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Financial Institution controlled are those corporations in which the majority of shares (>50 percent) are held by a financial institution or if a financial institution holds between 25 and 50 percent and there is no other investor holding more than 25 percent. Manager-controlled corporations comprises corporations in which small shareholders hold more than 75 percent of common stocks. Reject the null hypothesis of no correlation with the probability w of type I error.

Mann-Whitney-U-Test on Different Abnormal Returns in the Interval

	t_{-2} to t_1	t_{-1} to t_0	t_0 to t_1
Manager Controlled versus Family Controlled Nonfinancial Corporations	Z = -1.2958; w = 19.51%	Z = -1.3436; w = 17.91%	**Z = -2.8258; w = 4.7%**
Manager Controlled versus Financial Institution Controlled Nonfinancial Corporations	Z = -1.5783; w = 11.45%	Z = -0.7298; w = 46.55%	**Z = -2.3760; w = 1.75%**

Endnotes

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[1] See Marsh (1979) for the UK; Berglund, Liljeblom, and Wahlroos (1987) and Hietala and Löyttyniemi (1991) for Finland; Loderer and Zimmermann (1988) for Switzerland; Dhatt, Kim, and Mukherji (1996) for Korea; Kang and Stulz (1996) for Japan; Tsangarakis (1996) for Greece; Bøhren, Eckbo, and Michalsen (1997) for Norway; and Bigelli (1998) for Italy.

[2] For the German market, Brakmann (1993), Padberg (1996), Trautmann and Ehrenberg (1996) and Heiden, Gebhardt and Burkhardt (1997) report positive abnormal returns around the announcement day.

[3] For rights issues with standby agreement by U.S. industrial corporations (excluding public utilities) Hansen (1988) and Eckbo and Masulis (1992) report mean abnormal returns of –2.61% and –1.03%.

[4] For a discussion on the special role *Hausbanks* play in German corporation finance, see, e.g., Krahnen and Elsas (1998).

[5] See Wruck (1989); Hertzel and Rees (1997).

[6] See La Porta, Lopez-de-Silanes and Shleifer (1999); Gorton and Schmid (2000).

[7] See, e.g., Franks and Mayer (1997); Weigand and Lehmann (2000).

[8] This is a common finding internationally. See Rajan and Zingales (1995).

[9] German corporations on shares have a two tier board structure that consists of the managing board ("Vorstand") under the oversight of a separate board of non-managing directors ("Aufsichtsrat").

[10] See Polonchek, Slovin and Sushka (1989); Varma and Szewcyk (1993).

[11] See Hietala and Löyttyniemi (1991); Bigelli (1998).

[12] See Arbel and Strebel (1982); Arbel, Carvell and Strebel (1983); Arbel (1985); Carvell and Strebel (1987).

[13] See Carvell and Strebel (1987); Brennan and Hughes (1991).

[14] See La Porta, Lopez-de-Silanes and Shleifer (1999); Boehmer (1999); Becht and Mayer (2000).

[15] See Szewczyk, Tsetsekos and Varma (1992), Kothare (1997).

[16] See Shleifer and Vishny (1986).

[17] See the free cash flow argument put forward by Jensen (1986).

[18] See Franks and Mayer (1997) and Shleifer and Vishny (1997) for a survey on the incentives and behavior of various shareholder types, as well as their interactions among one another.

[19] See MacKinlay (1997) for an excellent survey.

[20] This has been a very time-consuming task, because there are no retrievable databases available in Germany for our sample period. We are grateful to two major German bank that allowed us to search their archives for published newspaper reports on German corporations.

[21] See Entrup (1995).

[22] For similar classification schemes, see Franks/Mayer (1997), La Porta, Lopez-de-Silanes and Shleifer (1999).

[23] See for example Marsh (1979) for UK-rights issues; Wruck (1989) for US private placements and Eckbo and Masulis (1992) for underwritten US rights issues.

[24] Most seasoned equity issues without rights are floated to issue new shares to employees or to exchange shares in a take-over. These are combined events and therefore not included in the study.