

INFORMATION SIGNALING AND OWNERSHIP TRANSITION – VALUE EFFECTS OF SHARE ISSUE PRIVATIZATIONS

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Abstract

Privatizations are commonly associated with an increase in efficiency due to a stronger focus on profit maximization and less agency conflicts because the management does not have to serve political objectives anymore. This paper discusses whether SIPs generate positive announcement returns because of increased efficiency after the ownership transition. We apply a market model event-study methodology based on a sample of 134 SIPs in the 1979-2003 period. We identify significantly negative CAARs between -0.125% and -1.766% and find that firm and offering size, the proportion of secondary shares issued within the SIP as well as the market environment have a negative impact on announcement returns. In contrast, the negative CAARs are less distinctive for enterprises that had prior SIPs.

Keywords: Share issue privatization, seasoned equity offerings, ownership structure, event study

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I. Introduction

A number of studies analyze the returns of initial public offerings of divested state-owned enterprises as well as returns to subsequent share issuances,³² e.g., Dewenter and Malatesta (1997) or Jones, Megginson, Nash and Netter (1999). Prior research has found significant positive returns which are often attributed to substantial underpricing. These observations are reflected by Altinilic and Hansen (2003) or Laurin, Borardman and Vining (2004), who argue that governments deliberately underprice initial and subsequent share issue privatizations (SIP) in

order to signal that they do not intend to redistribute the value of shareholders' investments and to align shareholders' interests with those of the privatizing government.

However, if underpricing is a reliable signal for stating that governments will not interfere in a firm's operating activities in the future, then, as suggested by Dewenter and Malatesta (1997), a SIPs should be underpriced more strongly compared to IPOs and seasoned equity offerings (SEO) of firms in the private sector. In turn, this expectation should be incorporated into stock prices at the day the information on a subsequent equity offering of a SEO becomes public.

Several studies document that the announcement of an issuance of seasoned equity for non-state-owned enterprises is associated with average negative abnormal returns between -2.00% and -3.00%.³³ Even though these findings may not be strictly comparable with the announcements of a SIPs, because private-sector SEOs might be underpriced for different reasons, one may expect the announcement of a subsequent share issuance (of secondary or primary shares) during a privatization

³² Prior research distinguishes between two methods of privatization through a sale of ownership claims in state property for cash payments: On the one hand, the government may sell the state-owned enterprise to individual, strategic or groups of investors. On the other hand, some or all of a government's stake in a state-owned enterprise is sold to investors through a public share offering. We define this process as share issue privatizations (SIPs), whereas some or all of a government's stakes are sold via a public offering. Although this process is similar to IPOs of privately held enterprises, the government's motives are different. Megginson and Netter (2001) claim that the motivation for SIPs is to raise money and to respond to political objectives. By contrast, private offerings are structured primarily to raise proceeds. We refer to the offering of a government's stakes in a state-owned enterprise for the first time as initial share issue privatization, while subsequent equity offerings are defined as seasoned or subsequent share issue privatization.

³³ See, for example, Asquith and Mullins (1986), Mikkelsen and Partch (1986), Akhigbe and Harikumar (1996), Bayless and Chaplinsky (1996), Guo and Mech (2000), Clarke, Dunbar and Kahle (2001), Gajewski and Ginglinger (2002), Best, Payne and Howell (2003), D'Mello, Tawatnuntachai and Yaman (2003) and Byoun (2004).

process to result in negative market reactions. Asymmetric information is regarded as one reason for the negative market reaction as outside investors usually do not exhibit the same information about the firm's true value than inside investors. Furthermore, the government's motives to privatize are ambiguous.

A rich body of literature on post-privatization performance has emerged over time providing evidence that profitability, operating efficiency, output as well as the financial performance increase after a reduction of state ownership.³⁴ Barberis, Boycko, Shleifer, and Tsukanova (1996), Frydman, Gray, Hessel, and Rapaczynski (1999) and more recent Jelic, Briston, and Aussenegg (2003) demonstrate that the rationale behind these empirical findings is primarily to be found in changes in the ownership structure and the board of directors. Profit-oriented shareholders participating in SIPs processes encourage managers to the primary goal of shareholder value, whereas, in line with Moore (1992), purely state-owned enterprises (SOE) may pursue multiple aims related to diverse political objectives, for instance, job security. Hence, one can assume that the announcement of a SIP, and, more specifically, the direct (SIPs with secondary shares only) or indirect (SIPs with secondary and/or primary shares) reduction of state ownership, generate positive announcement returns.

Overall, the valuation effects associated with an announcement of a SIP are ambiguous. To the extent that an intensified monitoring by capital markets result in performance improvements, announcements of SIPs should cause positive valuation effects. By contrast, a negative market reaction reflects the market's perception of the degree to which the government intends to redistribute firm value after privatization, i.e., affect the value of the firm through policy changes in regulation, taxation and so forth. Since the valuation effect of SIP announcements is ambiguous, we enlarge the body of research by analyzing the market reaction to announcements of SIPs. Consequently, two questions arise: First, do share prices react to SIP announcements? Second, if valuation effects are observable, are they caused by an expected increase of performance or by the market's perception of a government's motives for privatization?

Our study design applies a market model event-study methodology based on a sample of 134 SIPs, which are conducted by 82 enterprises from 15 Western European countries between 1979 and 2003. We identify negative cumulated average abnormal

announcement returns between -0.125% and -1.766% which can largely be explained by firm and offering size as well as the market environment. In contrast, the negative CAARs are less distinctive for enterprises that had prior SIPs

The remainder of this paper is organized as follows: First, we explore the manifold theoretical and empirical background against which our investigation is organized. Section III deals with the data and the methodology used in our event-study analysis. Subsequently, section IV describes the results of the univariate analysis. Section V discusses the results of our event-study, while section VI presents the results of the cross-sectional regression. Finally, section VII concludes with a summary and discussion of the results.

II. Theoretical Framework and Hypotheses

It is usually assumed that state-owned enterprises (SOEs) are less efficient compared to private ones due to the fact that they have to cater to the objectives of politicians and are not able to pursue the aim of maximizing efficiency. In line with Villalonga (2000), three distinct theoretical approaches (Agency and Property Rights Theory, Public Choice Theory and the Organizational Theory) can be made to explain why efficiency of SOEs is lower. Most important, as proposed in this analysis, managers of SOEs attempt to maximize their private benefits rather than the utility function of the government [De Alessi (1969)]. Furthermore, reducing ownership in SOEs is impossible for individuals prior to an equity offering. Therefore, in order to explain different levels of efficiency one has to consider the agency conflict between owners and managers as well as the absence of a market for corporate control. This leads to the objectives of the Agency and Property Rights Theory. However, the Public Choice Theory assumes that politicians are self-interested agents who aim at maximizing their own utility. Third, Villalonga (2000) suggests that the Organizational Theory explains differences between public and private firms with regard to efficiency by analyzing the SOE inherent organizational characteristics. The overviews of theoretical and empirical studies provided by Villalonga (2000) and Megginson and Netter (2001) show that considerable research energy has been invested into determining what factors may explain differences in efficiency between privately and state-owned firms. Overall evidence consistently shows that privately owned enterprises provide superior degrees of efficiency.

Boycko, Shleifer and Vishny (1996) highlight the problem of inefficient state-owned enterprises and argue that efficiency could be enhanced after privatization. A privatization transfers several control rights over a firm's resources to managers who are willing to meet the interest of the shareholders.

³⁴ Studies documenting an improvement of profitability include Boubakri and Cosset (1998), Boycko, Shleifer and Vishny (1996), D'Souza and Megginson (1999), Megginson and Netter (2001) and D'Souza, Megginson and Nash (2005). However, Martin and Parker (1995) analyze eleven British enterprises privatized during the 1981-1988 period and observe decreasing values of both performance measures they applied.

Therefore, vote maximizing politicians who have a fundamental interest in employment in order to gain support of trade-unions in elections have to compensate managers for excess employment via subsidies. Budget restrictions for politicians are the principle reasons why a reduction of excess employment and a restructuring of the firms will be achieved after a privatization [Boycko, Shleifer and Vishny (1996)]. A privatization will subject managers to profit maximization, since shareholders are profit-oriented, whereas, in line with Moore (1992), a state-owned enterprises pursues multiple objectives, such as keeping employment rates high. Moreover, a rich body of empirical studies on post-privatization performance has emerged over time, applying a broad set of sophisticated methods and indicators to measure possible performance variations of newly privatized firms. Empirical investigations of D'Souza, Megginson and Nash (2005) and the research pooled in Megginson and Netter (2001), document that firms experience significant increases in efficiency and profitability due to privatization because managers are monitored by the capital market [Boubakri and Cosset (1998)]. The basic idea of the performance improvement test is to compare the pre-privatization performance for enterprises with their post-privatization performance. Megginson, Nash and van Randenborgh (1994) were one of the first concerning performance changes after a divestiture. Backed on a sample of 61 privatized firms of 18 countries during 1961-1989 they show that profitability, operating efficiency, output as well as the financial performance increases due to a SIP. Additionally, D'Souza and Megginson (1999) and Boubakri and Cosset (1998) offer similar results as Megginson, Nash and van Randenborgh (1994). In contrast, Martin and Parker (1995) analyze eleven British enterprises during the 1981-1988 time period and find decreasing values for their performance measures applied. They assume that privatization does not result in an enhancement of performance, as they concede that the management could have reorganized the firm prior to the privatization process with respect to capital market requirements. Frydman, Gray, Hessel and Rapaczynski (1999) report an improvement in performance after the government sold parts of their shares to outside or foreign owners. However, they show that there is no evidence for a beneficial effect on performance if ownership rights were transferred to insiders like managers or employees. Barberis, Boycko, Shleifer and Tsukanova (1996) analyze a sample of Russian shops which have been privatized during the 1990s and conclude that for an effective privatization the chief executive officer has to be changed. In a more recent study, Jelic, Briston and Aussenegg (2003) find for Polish privatized firms a significant effect of foreign ownership on the development of share prices. In sum, Megginson and Netter (2001) conclude that their review of 22 studies provides "[...] at least limited support for the proposition that

privatization is associated with improvements in the operating and financial performance of divested firms" [Megginson and Netter (2001)] and that almost "[...] all studies that examine post-privatization changes in output, efficiency, profitability, capital investment spending and leverage document significant increases in the first four and significant declines in leverage" [Megginson and Netter (2001)].

All studies mentioned poses insights into the impact of ownership transition, and provide guidance for an effective privatization. In this context, a reduction of state ownership seems to be value enhancing and should result in a positive market reaction. One commonly applied methodology to privatize state-owned enterprises is a share issue privatization. Many studies, e.g., Dewenter and Malatesta (1997) or Jones, Megginson, Nash and Netter (1999), analyze the returns of initial share issue privatizations and find significant positive returns which are often caused by substantial underpricing. Perotti (1995) and Biakis and Perotti (2002) provide a theoretical foundation for underpricing, based on a government's ability to signal that they do not intend to redistribute the value of the shareholders' investment, i.e., affect the value of the firm through policy changes in regulation, taxation and so forth.

Perotti (1995) categorizes governments as either populist or committed governments and only the latter can resist the politically valuable option of reallocating firm value to a specific constituency after a privatization. Since a populist government would also pretend to pursue the privatization process, a committed government requires a credible signal, whereas "[...] a partial sale and (possibly) its underpricing are signals of commitment" [Perotti (1995), p. 848]. This approach implies that the consequences of subsequent interference also affect the government that is still the biggest shareholder after a gradual sale [Perotti (1995) and Jones, Megginson, Nash and Netter (1999)]. Furthermore, successive selling of small proportions of the governmental stake bears the risk that the motives of a populist governments become public, which reduces the proceeds achievable in subsequent share issuances.

In contrast, divesting SOE via SIP leads to the problem that the government has to assure that it intends to transfer the right of disposal. However, underpricing is a reliable signal when it is used by a committed government in order to capture the economic benefits of a privatization. Hence, the level of underpricing necessary is related to the investors' expectations about future policy and "[...] the secondary market will place a higher value on a firm if the government credibly signals commitment" [Jones, Megginson, Nash and Netter (1999)]. In addition, to signal a government's identity with the privatization process and to overcome uncertainty about future policy, underpricing of an IPO or

subsequent SIPs may provide the opportunity to maximize the present value of the total net proceeds from all equity offerings [Laurin, Borardman and Vining (2004)].

Altinilic and Hansen (2003), argue that underpricing is important to compensate investors for the uncertainty about the firm's prospects and thus, the value of the firm. With respect to the uncertainty about the firm's value and the government's motives to privatize a SOE, Jones, Megginson, Nash and Netter (1999) analyze if political objectives and economic factors have an impact on initial returns. Using sample of 630 SIPs during 1977-1997, they find returns of 34.1% for initial and 9.4% for seasoned share issue privatizations and document that their results "[...] indicate that much of the underpricing of initial SIPs is a concession by governments designed to overcome the political obstacles that stand in the way of successful privatization and the economic benefits that might flow from it" [Jones, Megginson, Nash and Netter (1999), p. 234].

The empirical studies reviewed provide evidence that returns of subsequent SIPs are positive and that the decision to privatize, i.e., the time pattern for later SIPs is made by politicians or managers who exhibit superior information of the firm. Assuming managers to act in the interest of their shareholders, a strong incentive exists to issue new equity, when the capital market evaluates shares above the value which would be justified by the firm's prospects. Consequently, the announcement of issuing stocks should result in a re-evaluation of the share price by the investors [Asquith and Mullins (1986)]. Therefore, stock prices of partially privatized firms should decline when the government is willing to sell its shares.

Concluding from the arguments mentioned above, the transition of ownership should result in an improvement of operating and financial performance. Thus, the announcement of a further equity offering should cause a positive market reaction. In contrast, underpricing of initial or subsequent share issuances, information asymmetries as well as agency problems should have a negative impact on share prices. Hence, the question can be raised which effect will predominate:

Question 1: Do share prices react to seasoned share issue privatization announcements?

Question 2: Second, if valuation effects are observable, are they caused by an expected increase in performance (positive valuation effects) or by the market's perception of a populist government's motives for privatization (negative valuation effects)?

The empirical research supports the existence of widespread negative returns related to SEO announcements of non state-owned enterprises. Prior research on non-state-owned enterprises provides

evidence that an announcement of an equity issuance results in a decline of share prices between -0.82% and -3.56% within two days the information becomes public (see table 1).³⁵

But to what extent are these findings transferable to SIPs and more generally, what affects announcement returns in a SIP process? Following the efficient market hypothesis (EMH), the announcement of an issuance will cause no price effect because arbitrage will equalize stock prices and the prices of stocks' close substitutes. Thus, sales of large blocks of shares will only cause a price reaction because the stock is priced relative to its substitutes. If close substitutes are not available, then, according to the price pressure hypothesis, an excess supply leads to a negative price movement [Akhigbe and Harikumar (1996)]. Hess and Frost (1982) provide empirical support for this theory.

Allocating income rights to the capital market can result in an improvement of a firm's profitability because of a reduced likelihood of political interference. Faccio, Masulis and McConnell (2006) find empirical support that firms with small governmental influence outperform enterprises facing interference by politicians. In this context we assume governments to be at least one of the companies' biggest blockholders, who usually possess superior information about the companies' prospects. Therefore, a sale of shares conjectures the information that the government trades on an informational advantage. By selling a large proportion of shares, the government may communicate a negative signal about the firm's future cash flows. This argument corresponds to the one adduced by Fidrmuc, Goeren and Renneboog (2006) to explain negative market reactions to the announcement of insider stock sales. Furthermore, the government may be a populist government as defined by Jones, Megginson, Nash and Netter (1999) that faces the problem of liquidity needs for their redistributive policy. Thus, the negative signal of a government that sells its shares should be evaluated by the capital market with respect to the firm's cash flow [Jones, Megginson, Nash and Netter (1999)].³⁶

Additionally, the findings of Loughran and Ritter (1995) and Loughran and Ritter (1997) provide empirical support that firms take advantage of a current overvaluation of their shares to issue equity; then, perceived overvaluation leads to a subsequent negative market reaction if a seasoned equity offering is announced. The reason for the "window of opportunity problem" can be found in an asymmetric

³⁵ Most of the results correspond to an event-window starting one day prior the announcement day and ending one day thereafter.

³⁶ Conversely, director's put their own wealth at stake and their signal of selling shares is therefore less informative, if they act also due to liquidity needs [Fidrmuc, Goeren and Renneboog (2006)].

information problem which transfers into information costs. Thus, firms will issue new equity only if information costs are low [Myers and Majluf (1984)]. This leads to the following hypothesis:

Question 3: The valuation effect is more detrimental for larger SIPs.

Considering IPOs of private non-state-owned enterprises, Ritter (1991) suggest that firms go public at market peaks, when comparable companies are valued above their true value, and therefore the issuer can take advantage of a “window of opportunity”. Therefore, the question arises, whether abnormal returns are less negative in strong equity markets, i.e., in a market environment with substantial increases in the index return over 200 days prior to the issue as well as a low standard deviation in that period. A positive market assessment may force a clustering of equity (initially and seasoned) issuances and “[...] may induce information spillovers and hence lower adverse selection problems” [Huyghebaert and Van Hulle (2006), p. 302)]. An explanation for IPO clustering was provided by Bayless and Chaplinsky (1996) who asserted reduced discount rates and behavioral finance effects, e.g., herding, as possible reasons. Therefore, we would expect governments to increase the relative as well as the absolute number of shares during periods of high pre-issuance market conditions because of reduced information costs:

Question 4: Do abnormal returns associated with sales of ownership claims depend on market conditions?

Given the decision to sell parts of an enterprise, the level of information asymmetry as to politicians’ intention to privatize should decrease in case of a seasoned SIP because the potential risk of redistribution of firm value by politicians will be reduced as described above. D’Mello, Tawatnuntachai and Yaman (2003) observe a relationship between the sequence of SEOs and the uncertainty about a firm’s value. They provide evidence for less unfavorable announcement reactions because of declining level of asymmetric information. Here, the rationale is that prevalently issuers experience lower information costs due to the issuers heightened reputation of not taking advantage of new shareholders, i.e., not to pursue multiple aims related to diverse political objectives:

Question 5: The level of asymmetric information associated with SIP depends on offering frequency. The market is less concerned about successive SIP announcements of firms. Conversely, the market is more concerned about the announcement of the first equity issuance after the IPO.

Issuing equity provides the possibility of issuing not only secondary shares but also new equity which ceteris paribus improves the financial situation of the enterprise. In addition, this effect should be supported by an increase in profitability, which is to

be expected after privatization [Megginson, Nash and van Randenborgh (1994) and Alexandre and Charreaux (2004)].

However, the impact of the amount of secondary shares issued in a SIP process on announcement reactions may be of a dual nature: On the one hand, selling secondary shares only conveys the market’s conviction of a reduction of political connection. This should be associated with a positive market reaction. Moreover, Alexandre and Charreaux (2004) argue that a retraction of the government and the issuance of new equity should also foster profitability due to the reduced likelihood of bankruptcy. However, a relative decrease in financial leverage due to a raise of new capital may cause declining monitoring activities of creditors [Jensen (1986)], which should result in negative announcement effects. On the other hand, the capital market may perceive a high amount of secondary shares as an indicator that the current stock price is high relative to managers’ assessment of the firm’s prospects, i.e., selling overpriced shares [Asquith and Mullins (1986)]. Consequently, this should result in a negative market reaction.

Question 6: The abnormal market reaction associated with SIP announcements depends on the proportion of secondary shares issued. A high (low) proportion of secondary shares should be associated with a negative (positive) market reaction.

Examining market reactions to subsequent equity offerings, Jensen (1986) draw the conclusion that managers act in their own interest by enhancing the assets under their management. The rationale is that managers even risk the consequence of a declining equity value, i.e., investment in projects with negative net present values, in order to increase the total assets controlled by them. In general, large free cash flows as well as lower financial constraints are mentioned as the origin of the over-investment problem in diversified firms [e.g., Berger and Ofek (1995)]. However, the negative market reaction caused by this agency conflict may be attenuated if the firm exhibits substantially growth opportunities. In line with previous research, the existence of growth opportunities induces less negative market reactions [e.g., Denis (1994)]. Interestingly, the study conducted by Denis (1994) does not detect any relationship between announcement effects and the profitability of new investment projects. Yet, firms with an optimistic assessment of their future prospects, as reflected in high market-to-book-ratios, should experience a less negative announcement effect:

Question 7: The market reaction to announcements of share issue privatizations depends on the market’s perception about a firm’s investment opportunities. The market reaction to the announcement of firms with more (less) investment

opportunities is positive (negative).

Changes in the number of employees prior to a SIP may be an important signal for the capital market perception of a firm's profitability. On the one hand, a remarkable reduction in the number of employees conveys that a firm has downsized its staff in order to become more profitable, e.g., indicates a reduction of overemployment. On the other hand, politicians may noticeably increase the number of employees as a means to gain support of trade-unions for increasing employment.

Question 8: A relative decrease (increase) in the number of employees one year prior to a SIP announcement causes a positive (negative) market reaction.

III. Data and Methodology

A. Data and Methodology

Our initial sample consists of 248 SIPs from 15 Western European countries and covers the period of 1979 through 2003. Announcement dates are obtained from the Securities Data Corporation (SDC) database and encompass information on the type of equity issue, e.g., primary, secondary or both types, the number of shares issued, the issue price, and the issue dates. Stock price data are obtained from Thomson Financial DataStream and the announcement dates come from Dow Jones, Reuters and the Lexis Nexis databases. For an inclusion in the final sample, we require a firm's announcement of a privatization via SIP to satisfy at least one of the following criteria: (1) the government announced an equity offering, (2) the enterprise announced a share issuance, (3) a state-owned holding company announced or accomplished a stock disposition, (4) the government authorized a further reduction in their stake, (5) the government actually sold a further stake or approved an offering of a further stake in the near future, (6) the shareholders agreed to a further SIPs or (7) an investment bank acknowledged that shares had been sold.

For sample refinement purposes, initial public offerings and events of uncertain announcement days are excluded from the sample. As our research interest centers on examining the effects of seasoned share issue privatization announcements, we require all sample firms to have stock returns throughout all event and estimation periods. Since Thomson Financial DataStream does not provide share prices for every enterprise in the initial sample, our data set is reduced by 47 transactions. Moreover, in order to avoid confounding events within the event windows as well as defining different lengths of estimation periods, the final sample was pared down to 82 enterprises that conducted 134 SIPs.

B. Control Variables

We use the Thomson Financial DataStream INDC3 code to classify the firms of the final sample into ten industries: basic industry (BASIC), cyclical consumption industry (CYCGD), cyclical services

(CYSER), general industry (GENIN), information technology (ITECH), non-cyclical consumption industry (NCYCG), non-cyclical services (NCYSR), resources (RESOR), financial services (TOTLF), and utilities (UTILS). As more than half of the SIPs originate from the non-cyclical consumption, the resource or the financial services industry, we construct the binary variables Financial Services and Utility to capture a firm's affiliation to the financial or utility industry.

Firms that experience political interference, i.e. due to changes in the regulatory environment, may also suffer from an increase in their systematic risks [Schwert (1981)]. In order to control for a company's risk, we include the systematic risk factor obtained from the market model regression in the estimation period.

The probability to receive political attention seems to be greater for large firms. To control for firms' size, we include the company's market value at the announcement day, which is obtained from Thomson Financial DataStream. The absolute and the relative value of shares issued as well as the proportion of secondary shares offered comes also from Thomson Financial DataStream and is based on the information of the type of equity issuance. Furthermore, we include the proxy SIP-frequency to indicate whether the enterprise had prior SIPs (coded as zero) or if the firm conducts its first subsequent equity offering (coded as one).³⁷ We use the relative change in the number of employees one year prior to the announcement to capture reorganization activities. Additionally, we include the market-to-book value at the announcement day to measure the market's perception of the firm's future prospects. Finally, we apply two measures to control for the overall market environment: the mean return and the standard deviation of the benchmark index during the estimation period.

C. Event-Study Methodology

The stock market reactions to seasoned equity offering announcements are measured using daily stock returns. One testing strategy is to consider SIP activities and to clarify whether prices adjust to this news immediately or over a long time period [Shleifer (2000)]. For that purpose, an event-study analysis is designed to identify abnormal returns within a well-specified event period.³⁸ Abnormal returns are calculated as the *ex post* observable returns' deviations from those returns which had occurred in the absence of SIP announcements.

Following the methodology of Armitage (1995), a market-adjusted model is used to isolate potential extraordinary effects associated with SIP announcements. We estimate abnormal returns for each security within our final sample by comparing

³⁷ As mentioned above, we exclude IPOs of SOE.

³⁸ The term "event period" is a synonym for "event window" within this paper.

the security's returns which occurred around the announcement dates to the returns of a market index. Thereby, it is possible to estimate expected returns for given returns of the market index as follows:

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

where α_i and β_i are estimates from an Ordinary Least Square regression, $\varepsilon_{i,t}$ denotes the disturbance term, $R_{i,t}$ is the logarithmic return of security i and $R_{m,t}$ is the logarithmic return of a market index for day t . Abnormal returns are calculated as prediction errors:

$$AR_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t},$$

where $AR_{i,t}$ is the excess return on security i for day t and t_0 denotes the announcement day.³⁹ We defined an estimation period of 200 days which ranges from $[t_{-220}, t_{-20}]$ days prior to the event day in order to estimate the market model parameters. For each individual security, the calculated abnormal returns have to be aggregated in order to control for price adjustments over the time period. Therefore, cumulated abnormal returns (CAR) around the announcement day t_0 are calculated as the sum of the prediction errors for each security within the event window of $[t_0 - \tau, t_0 + \tau]$ days:

$$CAR_{i,[t_0-\tau, t_0+\tau]} = \sum_{t=t_0-\tau}^{t=t_0+\tau} AR_{i,t} \quad (3)$$

Since our research scope is directed towards examining whether joint cumulated effects are different from zero, we construct a portfolio comprising all securities as well as subsample portfolios according to different categories of SIPs, e.g., the issuances of secondary shares only. For each portfolio we test the null hypotheses whether the cross-sectional cumulated average abnormal returns (CAAR) in the event period are different from zero. For a sample of N securities CAARs are calculated as defined by equation (4):

$$CAAR_{[t_0-\tau, t_0+\tau]} = \frac{1}{N} \sum_{i=1}^N CAR_i$$

We draw statistical inferences for the different event-window cumulative average abnormal returns using a standard t-test statistic. However, Brown and Warner (1985) mention that an event might increase the variance, and as a consequence the null hypothesis is rejected too often. In order to verify our test results, we implement the test statistic described by Böhmer, Masumeci and Poulsen (1991) and use the variance of the market model residuals to

standardize cumulated abnormal returns. Finally, we also apply a non-parametric rank test according to Corrado (1989), which is more powerful than the usual t -test.

IV. Descriptive Statistics (1)

The sequence of share issuances for the full sample, except 14 announcements for which further information was not available, is shown in table 2.

The table provides evidence that most of the enterprises conduct up to three subsequent equity offerings. 79 firms offer shares at least once after their initial privatization step, whereas 16 out of 79 enterprises issue new shares within the first subsequent SIP only. Approximately 24% of the firms (32 firms) issue conduct two equity offerings and about 17% (23 firms) are divested in three or more stages.

Remarkably, in the majority of the SIPs (91 announcements or 67,91%) the government sells secondary shares only. We interpret this observation as an indication for limited growth opportunities because the companies obviously do not need additional equity. Around one of six SIPs is a primary share issuance.

Table 3 shows the annual distribution of all equity offering announcements and the respective characteristics of the SIP: Most of the firms issue shares in the second half of our sample period, whereas many SIPs are conducted within a four-year time period (1996-1999). Regarding the combined equity offerings, Table 3 shows that almost all announcements have been conducted between 1997 and 2000.

V. Market Reaction to Seasoned SIP Announcements

An aggregated view on the results of the event-study reveals remarkable patterns with respect to the speed of stock price adjustments to announcements of SIPs (see Figure 1). The stock prices begin to decline prior to the announcement day and drop substantially at the day the information becomes public. In line with market efficiency hypothesis the CAARs remain stable thereafter. (4)

Statistical inferences about these observations are provided by table 4.

The CAARs for the full sample range between -1.766% to -0.125%. The results show that investors perceive the announcement of a SIP of secondary, primary and combined shares as unfavourable information.⁴⁰ Nevertheless, compared to existing evidence provided for private companies' SEOs of up

³⁹ In this paper, the terms "prediction error" and "abnormal return" are used as synonyms.

⁴⁰ See Akhigbe and Harikumar (1996) for a detailed discussion of stock price adjustments to SEO of all equity firms and D'Mello, Tawatnuntachai and Yaman (2003) for results for returns of firms that announced multiple primary SEOs.

to -3.30% the capital markets seem to be less concerned about the announcement of a subsequent equity offering within a privatization process. The implication of this result may be of a dual nature: On the one hand, an average decline of -0.691% (CAAR) implies a predominance of the negative effects associated with an announcement of a successive equity offering. On the other hand, these results could support the theory that positive privatization effects attenuate the negative market reaction.

A closer look at Table 5 reveals that omitting the announcements of primary and combined SIPs' the cumulated average market reaction for pure secondary SIPs is more negative. A pure sell-off of public ownership without proceeds for the listed company to finance future growth signals at least to some extent an attractive share price level from the perspective of the seller. Yet, seasoned equity offerings, in general, are underpriced in order to compensate new shareholders for the uncertainty about the firm's value. Our results also indicate that the underpricing has already partially been incorporated into share prices the day the subsequent offering becomes public.

Comparable studies report initial returns associated with an SEO ranging between 2.2% for private SEOs and 9.4% for seasoned SIP [Jones, Megginson, Nash and Netter (1999) and Corwin (2003)]. Moreover, Dewenter and Malatesta (1997) provide evidence for the United Kingdom that IPOs of private enterprises are less underpriced compared with the degrees of underpricing within a SIP. Jones, Megginson, Nash and Netter (1999) find mixed evidence for a greater underpricing of initial SIPs compared with IPOs. However, when we compare the difference between the negative market reaction associated with a SIP announcement and the degree of underpricing of IPOs with the differences observed for SIPs, we find some indication that SIPs are more detrimentally affected than equity offerings of private firms.

VI. Regression Results

Table 6 provides the results of our regression analysis. The four models are estimated using ordinary least squares, whereas White (1980) Heteroskedasticity-Consistent Standard Errors and Covariances are applied to calculate t-statistics.

The third question addresses that the market reaction to an announcement of a further SIP to be more negative for large SIPs. Previous research uses the relative offering size as a proxy for the price pressure hypothesis and finds a negative relationship between the relative offering size and the announcement reaction [Asquith and Mullins (1986) and Akhigbe and Harikumar (1996)]. Accordingly, our two proxies for offer size (absolute and relative value of shares issued) have a negative sign and are significant on a 1% level. Beyond the potential price pressure we interpret this result as being consistent

with the hypothesis that the issuer trades on superior information and sells shares at attractive price levels.

However, the capital market may also perceive an announcement of an issuance of a large proportion of the enterprises' equity as a signal of a populist oriented government. A populist government may prefer to achieve privatization proceeds in the short term, because their underlying motives may become public. In contrast, the regression results indicate a weak relation between the proportion of secondary shares issued and the announcements effects. In one of four models, the variable is significantly related to CARs only. While our above mentioned results show that the capital market is more concerned about a solely secondary share offering, the regression analysis provide at most weak evidence.

In line with the results of previous research, but conversely to Masulis and Korwar (1986) and Denis (1994) strong equity markets, i.e., stock market run-ups prior to the announcement date, are negatively related to announcement period CARs. In all four models, the proxy for market environment (Mean Return $R_{i,(t-220;t-20)}$) is significant, which confirms our hypothesis that the market reaction depends on market conditions. Furthermore, our second measure for hot equity markets, the standard deviation of the benchmark index during the estimation period, provides further support for this view. In contrast to our previous assumption, the sign of our two measures (Mean Return $R_{i,(t-220;t-20)}$ and the standard deviation of the benchmark index) do not indicate, that the market environment may reduce information costs. This observation, combined with the negative impact of selling a high proportion of secondary shares, supports the hypothesis that market participants are aware that the government may take advantage of a window of opportunity.

Focusing on the possible allocation of the issuance proceeds, we suggest that issuing firms with less growth opportunities are more likely to undertake investment projects with negative net present values. Therefore, we previously concluded that the existence of growth opportunities should attenuate the negative market reaction. As our proxy for growth opportunities, the market-to-book-ratio at the announcement date, is not significant, we are not able to support this hypothesis. Thus, the short-term market reaction seems to be independent from the existence of future growth opportunities.

If we take the SIP frequency into account, we find that the negative market reaction is less distinctive for enterprises that had prior equity offerings. This supports the view of D'Mello, Tawatnuntachai and Yaman (2003) that prevalently issuers experience lower information costs. Therefore, the advantageousness of conducting more SIPs, expressed in less pronounced negative abnormal returns, confirms the hypothesis that a higher information flow to the capital market via subsequent equity offerings reduces the uncertainty regarding a government's future policy as to

interference.

Because politicians may perceive seasoned equity offerings as a means to obtain votes for subsequent elections, e.g., due to preferential allocations of stock at discounted prices, we suggest that companies which have experienced an increase in employees one year prior to the announcement of a SIP, may be subjected to governmental interests. The results of table 6 show that the coefficient of a percentage change in the number of employees is negative and significant at the 10% level in Model I and II. We interpret this observations as an only minor support for the hypothesis that politicians take advantage of a subsequent SIPs by increasing staff. Following research by Best, Payne and Howell (2003) we controlled for a firm's affiliation to selected industries, systematic risk and size. We find the coefficient for utilities to be significantly positive, whereas for firms of the financial services sector no relationship is observable. In accordance with D'Mello, Tawatnuntachai and Yaman (2003), regulated industries are characterized by less information asymmetry and utility firms can reduce adverse selection costs due to an information improvement at subsequent offerings. Given a revealing base of information, our result suggests that firms in the utility sector exhibit lower negative abnormal market reactions, which is in line with reduced information asymmetries.

Following previous research, we include the market value at the announcement day as a proxy for uncertainty and asymmetric information [Corwin (2003) and Laurin, Borardman and Vining (2004)]. We assume that small firms experience more information asymmetries and greater uncertainty. However, given the coefficient's sign these firm-specific characteristics appear to have a negative influence on market reactions indicating that large firms are associated with larger information asymmetries. One possible explanation for this result might be that governmental interference is more likely in larger firms since a populist politician's intention is to raise privatization proceeds and to obtain the opportunity to redistribute firm value after privatization. Since the risk coefficients are statistically insignificant in both models, our analysis provides only weak evidence that announcement returns are dependent on a firm's systematic risk.

VII. Summary and Concluding Remarks

This paper examines the market reaction to announcements of subsequent equity offerings within a share issue privatization process. While previous research has shown a positive impact of privatization on performance due to transition of ownership, numerous studies document that the announcement of SEOs of non-state-owned enterprises is associated with substantial negative abnormal returns.

Analyzing a sample of 134 SIPs, which are conducted by 82 enterprises from 15 Western

European countries during the 1979-2003 period we identify negative cumulated average abnormal announcement returns between -0.125% and -1.766%. Using different event-windows and comparing offerings of secondary shares with our full sample we find abnormal returns to be pronounced more negative. Relating our results to prior evidence form non-state-owned enterprises, our results show that the capital market seems to be less concerned of the announcement of a subsequent equity offering within a privatization process. However, these univariate comparisons do not account for firm, issue and market environment specific effects.

The regression results reveal that offering size has a significant negative impact on the cumulated abnormal returns indicating that the capital market perceives a high proportion of the company to be sold in a SIP as consistent with a signal for a populist government. Regarding subsequent equity offerings we find that the negative abnormal returns are less distinctive indicating that each equity issue is not an independent SIP. Moreover, the results for the market environment proxies are difficult to reconcile with existing theoretical explanations. Contrary to theoretical predictions, the market environment does not seem to reduce information costs. However, we assume this finding to be in line with the idea of a window of opportunity. Finally, we control for a firm's affiliation to selected industries, systematic risk and size. In addition to previous research, we can conclude that firms in the utility sector exhibit lower negative abnormal market reactions. This might be attributed to lower information asymmetries. Our findings have implications for the privatization process as a gradual sale of state-owned enterprises via several steps that mitigate negative valuation effects and therefore preserve shareholder value.

References

1. Akhigbe, Aigbe, and T. Harikumar, 1996, Seasoned equity offerings by all-equity firms, *International Review of Economics & Finance* 5, 417-428.
2. Alexandre, Hervé, and Gérard Charreaux, 2004, Efficiency of French Privatizations: A Dynamic Vision, *Journal of Corporate Finance* 10, 467-494.
3. Altinilic, Oya, and Robert S. Hansen, 2003, Discounting and underpricing in seasoned equity offers, *Journal of Financial Economics* 69, 285-323.
4. Armitage, Seth, 1995, Event Study Methods and Evidence on Their Performance, *Journal of Economic Surveys* 9, 25-52.
5. Asquith, Paul, and David W. Mullins, 1986, Equity issues and offering dilution, *Journal of Financial Economics* 15, 61-89.
6. Barberis, Nicholas, Maxim Boycko, Andrei Shleifer, and Natalia Tsukanova, 1996, How Does Privatization Work? Evidence from the Russian Shops, *Journal of Political Economy* 104, 764-90.
7. Bayless, Mark, 1994, The Influence of Predictability on Differences in the Market Reaction to Debt and Equity Issue Announcements, *Journal of Financial Research* 17, 117-131.

8. Bayless, Mark, and Susan Chaplinsky, 1996, Is There a Window of Opportunity for Seasoned Equity Issuance? *Journal of Finance* 51, 253-78.
9. Berger, Philip G., and Eli Ofek, 1995, Diversification's Effect on Firm Value, *Journal of Financial Economics* 37, 39-65.
10. Best, Ronald W, Janet D Payne, and Jann C Howell, 2003, Analyst Following and Equity Offerings Subsequent to Initial Public Offerings, *Review of Quantitative Finance and Accounting* 20, 155-68.
11. Biais, Bruno, and Enrico C. Perotti, 2002, Machiavellian Underpricing, *American Economic Review* 92, 240-258.
12. Böhmer, Ekkehart, Jim Masumeci, and Annette B. Poulsen, 1991, Event-Study Methodology under Conditions of Event-Induced Variance, *Journal of Financial Economics* 30, 253-272.
13. Boubakri, Narjess, and Jean-Claude Cosset, 1998, The Financial and Operating Performance of Newly Privatized Firms: Evidence from Developing Countries, *Journal of Finance* 53, 1081-1110.
14. Boycko, Maxim, Andrei Shleifer, and Robert W Vishny, 1996, A Theory of Privatisation, *The Economic Journal* 106, 309-19.
15. Brown, Stephen J., and Jerold B. Warner, 1985, Using Daily Stock Returns: The Case of Event Studies, *Journal of Financial Economics* 14, 3-31.
16. Byoun, Soku, 2004, Stock Performance following Seasoned Stock-Warrant Unit Offerings, *Journal of Business* 77, 75-100.
17. Clarke, Jonathan, Craig Dunbar, and Kathleen M. Kahle, 2004, The Long-Run Performance of Secondary Equity Issues: A Test of the Windows of Opportunity Hypothesis, *Journal of Business* 77.
18. Clarke, Jonathan, Craig Dunbar, and Kathleen M. Kahle, 2001, Long-Run Performance and Insider Trading in Completed and Canceled Seasoned Equity Offerings, *Journal of Financial and Quantitative Analysis* 36, 415-430.
19. Corrado, Charles J., 1989, A nonparametric test for abnormal security-price performance in event studies, *Journal of Financial Economics* 23, 385-395.
20. Corwin, Shane A., 2003, The Determinants of Underpricing for Seasoned Equity Offers, *Journal of Finance* 58, 2249-2279.
21. D'Mello, Ranjan, Oranee Tawatnuntachai, and Devrim Yaman, 2003, Does the Sequence of Seasoned Equity Offerings Matter? *Financial Management* 32, 59-86.
22. D'Souza, Juliet, and William L. Megginson, 1999, The Financial and Operating Performance of Privatized Firms during the 1990s, *Journal of Finance* 54, 1397-1438.
23. D'Souza, Juliet, William L. Megginson, and Robert C. Nash, 2005, Effect of institutional and firm-specific characteristics on post-privatization performance: Evidence from developed countries, *Journal of Corporate Finance* 11, 747-766.
24. De Alessi, Louis, 1969, Implications of Property Rights for Government Investment Choices, *American Economic Review* 59, 13-24.
25. Denis, David J., 1994, Investment Opportunities and the Market Reaction to Equity Offerings, *Journal of Financial and Quantitative Analysis* 29, 159-177.
26. Dewenter, Kathryn L., and Paul H. Malatesta, 1997, Public Offerings of State-Owned And Privately-Owned Enterprises: An International Comparison, *Journal of Finance* 52, 1659-1679.
27. Faccio, Mara, Ronald W. Masulis, and John J. McConnell, 2006, Political Connections and Corporate Bailouts, *Journal of Finance* 61.
28. Fidrmuc, Jana P., Marc Goeren, and Luc Renneboog, 2006, Insider Trading, News Releases, and Ownership Concentration, *Journal of Finance* 61.
29. Frydman, Roman, Cheryl Gray, Marek P. Hessel, and Andrzej Rapaczynski, 1999, When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in the Transition Economies, *The Quarterly Journal of Economics* 114, 1153-1191.
30. Gajewski, Jean-Francois, and Edith Ginglinger, 2002, Seasoned Equity Issues in a Closely Held Market: Evidence from France, *European Finance Review* 6.
31. Guo, Lin, and Timothy S. Mech, 2000, Conditional event studies, anticipation, and asymmetric information: the case of seasoned equity issues and pre-issue information releases, *Journal of Empirical Finance* 7, 113-141.
32. Hess, Alan C., and Peter A. Frost, 1982, Tests for Price Effects of New Issues of Seasoned Securities, *Journal of Finance* 37, 11-25.
33. Huyghebaert, Nancy, and Cynthia Van Hulle, 2006, Structuring the IPO: Empirical evidence on the portions of primary and secondary shares, *Journal of Corporate Finance* 12, 296-320.
34. Jelic, Ranko, Richard Briston, and Wolfgang Aussenegg, 2003, The Choice of Privatization Method and the Financial Performance of Newly Privatized Firms in Transition Economies, *Journal of Business Finance & Accounting* 30, 905-940.
35. Jensen, Michael, 1986, Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *American Economic Review* 76, 323-329.
36. Jones, Steven L., William L. Megginson, Robert C. Nash, and Jeffrey M. Netter, 1999, Share issue privatizations as financial means to political and economic ends, *Journal of Financial Economics* 53.
37. Karim, Khondkar E., Robert W. Rudledge, Stephen C. Gara, and Mojib U. Ahmed, 2001, An Empirical Examination of the Pricing of Seasoned Equity Offerings: A Test of the Signaling Hypothesis, *Review of Quantitative Finance and Accounting* 17.
38. Laurin, Claude, Anthony E. Borardman, and Aidan R. Vining, 2004, Government Underpricing of Share-Issue Privatizations, *Annals of Public and Cooperative Economics* 75, 399-429.
39. Loughran, Tim, and Jay R. Ritter, 1995, The New Issues Puzzle, *Journal of Finance* 50, 23-51.
40. Loughran, Tim, and Jay R. Ritter, 1997, The Operating Performance of Firms Conducting Seasoned Equity Offerings, *Journal of Finance* 52.
41. Martin, Stephen, and David Parker, 1995, Privatization and Economic Performance Throughout the UK Business Cycle, *Managerial and Decision Economics* 16, 225-237.
42. Masulis, Ronald W., and Ashok N. Korwar, 1986, Seasoned equity offerings: An empirical investigation, *Journal of Financial Economics* 15.
43. Megginson, William L., Robert C. Nash, and Matthias van Randenborgh, 1994, The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis, *Journal of Finance* 49, 403-52.
44. Megginson, William L., and Jeffrey M. Netter, 2001, From State To Market: A Survey Of Empirical Studies On Privatization, *Journal of Economic*

- Literature 39, 321-389.
45. Mikkelson, Wayne H., and M. Megan Partch, 1986, Valuation effects of security offerings and the issuance process, *Journal of Financial Economics* 15.
 46. Moore, John, 1992, British Privatization - Taking Capitalism to the People, *Harvard Business Review* 39, 575-592.
 47. Myers, Stewart C., and Nicholas S. Majluf, 1984, Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have, *Journal of Financial Economics* 13, 187-221.
 48. Perotti, Enrico C., 1995, Credible Privatization, *American Economic Review* 85, 847-59.
 49. Ritter, Jay R., 1991, The Long-Run Performance of Initial Public Offerings, *Journal of Finance* 46, 3-27.
 50. Schwert, G William, 1981, Using Financial Data to Measure Effects of Regulation, *Journal of Law & Economics* 24, 121-58.
 51. Shleifer, Andrei, 2000. *Inefficient Markets: An Introduction to Behavioral Finance* (Oxford University Press, Oxford).
 52. Villalonga, Belen, 2000, Privatization and efficiency: differentiating ownership effects from political, organizational, and dynamic effects, *Journal of Economic Behavior & Organization* 42, 43-74.
 53. White, Halbert, 1980, A Heteroskedasticity-Consistent Covariance Matrix and a Direct Test for Heteroskedasticity, *Econometrica* 48, 817-838.

Appendices

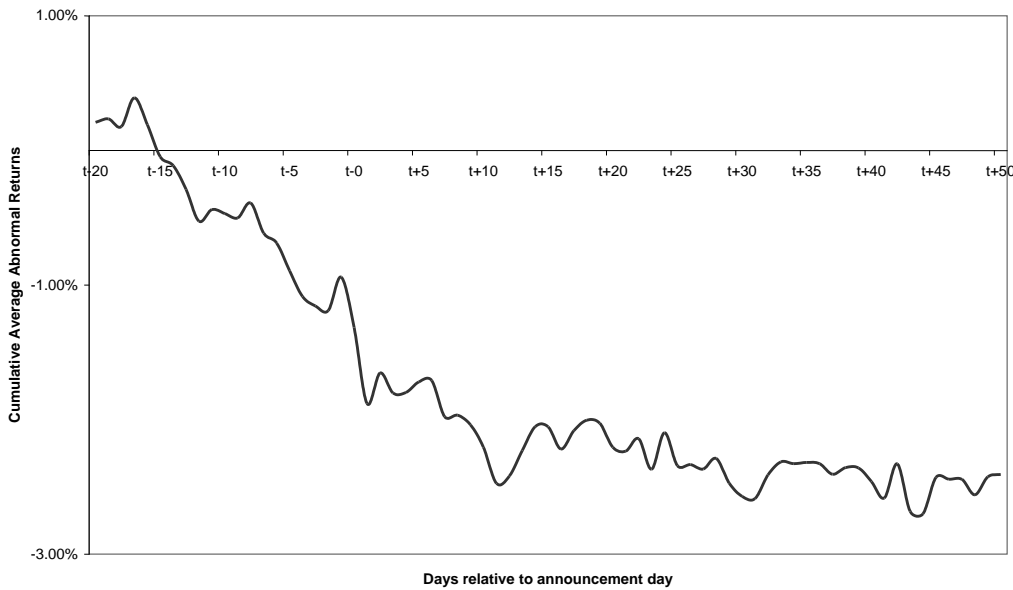


Figure 1. Cumulative average abnormal returns around a SIP announcement
Cumulative average abnormal returns for the entire sample

Table 1. Overview of selected studies on market reactions to SEO announcements

Research provided by...	Market Reaction	Market	Period	Sample Size
Byoun (2004)	-2.68%	USA	1980-1997	5,776
Clarke, Dunbar and Kahle (2004)	-2.25%	USA	1980-1996	424
Bayless (1994)	-2.92%	USA	1974-1983	223
Bayless and Chaplinsky (1996)	-2% to -3.3%	USA	1974-1990	1,881
Akhigbe and Harikumar (1996)	-0.82%	USA	1977-1988	60
Best, Payne and Howell (2003)	-1.75%	USA	1976-1993	1,861
Gajewski and Ginglinger (2002)	-1.00%	France	1986-1996	237
Karim, Rudledge, Gara and Ahmed (2001)	-1.57%	USA	1991-1994	283
Denis (1994)	-2.49%	USA	1977-1990	435
Guo and Mech (2000)	-2.79%	USA	1980-1994	1,509
Asquith and Mullins (1986)	-2.70%	USA	1963-1981	531
Mikkelson and Partch (1986)	-3.56%	USA	1972-1982	80

Table 2. Frequency Distribution

Frequency distribution of a sample of 82 firms from 15 Western European countries that announced multiple subsequent primary, secondary as well as both equity offerings within a share issue privatization process between 1979 and 2003.

Sequence of issue	Total (%)	Primary shares issued	Secondary shares issued	Primary and secondary shares issued
1	79 58.96%	16 69.57%	55 60.44%	3 50.00%
2	32 23.88%	5 21.74%	21 23.08%	1 16.67%
3	15 11.19%	2 8.70%	9 9.89%	2 33.33%
4	7 5.22%	0 0.00%	6 6.59%	0 0.00%
5	1 0.75%	0 0.00%	0 0.00%	0 0.00%
Total	134	23	91	6

Table 3. Annual Distribution of SIP Transactions

Annual distribution of a sample of 82 firms from 15 Western European countries that announced multiple subsequent primary, secondary as well as both equity offerings within a share issue privatization process between 1979 and 2003.

Year	No. of SEOs	Percent	cum. Percent	Primary shares issued	Secondary shares issued	Primary and secondary shares issued	n.a.
1979	1	0.75%	0.75%		1		
1983	2	1.49%	2.24%		2		
1985	3	2.24%	4.48%	1	2		
1986	1	0.75%	5.22%				1
1987	2	1.49%	6.72%	1			1
1988	3	2.24%	8.96%		3		
1989	2	1.49%	10.45%	1			1
1991	1	0.75%	11.19%		1		
1992	5	3.73%	14.93%	1	4		
1993	6	4.48%	19.40%	2	2	1	1
1994	9	6.72%	26.12%	3	5		1
1995	7	5.22%	31.34%	2	5		
1996	18	13.43%	44.78%	2	13		3
1997	13	9.70%	54.48%	1	10	1	1
1998	15	11.19%	65.67%	3	10	2	
1999	11	8.21%	73.88%	3	5	1	2
2000	9	6.72%	80.60%	1	6	1	1
2001	5	3.73%	84.33%	1	3		1
2002	10	7.46%	91.79%	1	9		
2003	11	8.21%	100.00%		10		1
Sum	134	100.00%		23	91	6	14

Table 4. CAARs of SIP announcements – all transactions

Panel I: all transactions

Event window	Nobs.	Median CAR	CAAR	t-Test	Boehmer Test	Corrado Rank Test
				t-value	z-score	z-score
[-10;+10]	134	-1.166%	-1.766%	-2.021**	-1.165	-5.504***
[-10;+5]	134	-1.436%	-1.282%	-1.613	-1.111	-5.110***
[-10;+1]	134	-1.560%	-1.442%	-2.268**	-1.907*	-6.886***
[-10;0]	134	-0.823%	-0.876%	-1.495	-1.276	-4.635***
[-5;+10]	134	-1.704%	-1.517%	-2.120**	-1.253	-5.263***
[-5;+5]	134	-1.442%	-1.033%	-1.606	-1.211	-4.853***
[-5;+1]	134	-1.417%	-1.193%	-2.427**	-2.201**	-6.668***
[-5;0]	134	-0.966%	-0.626%	-1.479	-1.506	-4.361***
[-1;+10]	134	-0.148%	-1.015%	-1.655	-0.812	-2.744***
[-1;+5]	134	-0.056%	-0.531%	-0.975	-0.712	-2.265**
[-1;+1]	134	-0.666%	-0.691%	-1.913*	-1.900*	-4.064***
[-1;0]	134	-0.270%	-0.125%	-0.426	-0.858	-1.699*
[0;0]	134	-0.397%	-0.373%	-1.547	-1.675*	-2.775***

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively

Table 5. CAARs of SIP announcements – offering of secondary shares only

Panel II: secondary SIPs

Event window	Nobs.	Median CAR	CAAR	t-Test	Boehmer Test	Corrado Rank Test
				t-value	z-score	z-score
[-10;+10]	91	-1.803%	-2.825%	-2.538**	-1.911*	-8.510***
[-10;+5]	91	-2.093%	-1.922%	-1.936*	-1.455	-6.155***
[-10;+1]	91	-0.943%	-1.560%	-1.773*	-1.295	-4.753***
[-10;0]	91	-0.113%	-1.013%	-1.273	-0.955	-3.723***
[-5;+10]	91	-2.404%	-2.657%	-2.682***	-2.151**	-8.820***
[-5;+5]	91	-2.217%	-1.754%	-2.068**	-1.744*	-6.416***
[-5;+1]	91	-1.917%	-1.392%	-1.930*	-1.646	-4.986***
[-5;0]	91	-1.171%	-0.845%	-1.363	-1.296	-3.931***
[-1;+10]	91	-1.568%	-2.154%	-2.849***	-2.045**	-6.805***
[-1;+5]	91	-1.186%	-1.251%	-2.172**	-1.563	-4.307***
[-1;+1]	91	-0.905%	-0.889%	-1.818*	-1.381	-2.807***
[-1;0]	91	-0.448%	-0.342%	-0.898	-0.831	-1.720*
[0;0]	91	-0.598%	-0.459%	-1.363	-1.461	-2.883***

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6. Regression Results

Abnormal returns are the dependent variable in all regressions and are calculated as the twelve and 16-day abnormal returns surrounding the SIP announcement date. The abnormal returns are based on a market model, which was estimated over the $[t-220, t-20]$ time period. Financial Services and Utility are binary variables to capture a firm's affiliation to the financial or utility industry. Market Value t_0 is the market value of equity calculated at the announcement day. Risk is a slope coefficient of the market model regression in order to control for a company's systematic risk. Absolute Value of Shares and Relative Value of Shares Issued are the absolute amount of equity issued as well as the proportion of shares issued to the total number of shares outstanding. SIP Frequency indicates whether a firm had prior subsequent SIPs (coded as zero) or not (coded as one). Relative Changes in Number of Employees One Year Prior to Announcement refers to the percentage change in staff one year before the subsequent announcement. Market-to-Book Value t_0 is the ratio of the market value of equity and the book value of equity at the announcement date. Mean Return ($R_{i(t-220,-20)}$) is the mean stock during the $[t-220, t-20]$ time period, whereas Standard Deviation of Benchmark Index captures the volatility of the respective benchmark index. We estimated two models for each event-window in order to avoid the problem of multicollinearity. All test statistics are computed using the heteroskedasticity-consistent covariance matrix from White (1980).

	CAR [-10;1]		CAR [-5;10]	
	Model I	Model II	Model III	Model IV
Constant	0.040	0.0715**	0.074***	0.115***
Financial Services	-0.006	-0.008	-0.038	-0.035
Utilities	0.048**	0.0437**	0.041***	0.040**
Market Value t_0	---	-0.000***	---	-0.000**
Abs. Value of Shares Issued	-0.000**	---	-0.000**	---
Relative Value of Shares Issued	---	-0.010***	---	-0.009***
Proportion of Secondary Shares of all Shares Issued	-0.005	-0.018	-0.016	-0.029*
SEO Frequency	-0.014	-0.018	-0.022*	-0.027**
rel. Changes in No. of Employees One Year Prior to Announcement	-0.062*	-0.068*	-0.020	-0.027
Market to Book Value t_0	0.001	---	0.001	---
Mean Return $RI_{(200)}$	-9.878*	-9.978**	-13.233**	-12.884***
Risk	---	-0.019	---	-0.028*
Standard deviation of Benchmark Index	-3.052**	-2.553	-4.281***	-4.121***
Number of Observations	103	108	103	108
adj. R^2	12.78%	24.30%	16.65%	24.35%

***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.