No. 2001/10

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This Version: 4th draft, November 2001

Abstract:
Our study examines the existence and the nature of private benefits of control in Germany. We do this by analyzing initial public offerings of founding-family owned firms and tracking their fate up to ten years following the IPO. Our sample includes a uniquely rich data set of 105 IPOs of family-owned firms floated from 1970 to 1991 on German stock exchanges. We find that, first, even ten years after the IPO, family owners, in the cross section, continue to exercise considerable control. Second, we show that there exist substantial private benefits of control in these firms and – to our understanding for the first time – we empirically measure what the nature of these private benefits really is. We also show that the separation of cash flow rights and voting rights via the issuance of dual-class shares is used to create controlling shareholder structures in order to preserve these private benefits. Third, we find a puzzling and significant underperformance of dual-class share IPOs, which can be explained by ex ante unanticipated expropriation of minority shareholders due to poor investor protection in Germany.

JEL Classification: G14, G32, G15

Keywords: Private benefits, Initial Public Offerings, Dual-class shares, Control transfers, Ownership structures, Investor protection

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I.   Introduction

The following study examines the existence and the nature of private benefits of control in Germany. It merges two strands of research. On the one hand, the literature on initial public offerings (IPOs), on the other hand, the flourishing law-and-finance literature on investor protection in different corporate governance regimes. Our work also relates to the literature on ownership concentration and blockholdings, but as we will explain later our perspective is somehow different from that of most of the previous research. For a system, which until its most recent history could be described as *a world of private benefits* – namely the underdeveloped German capital market – we show how poor investor protection enabled controlling owners to extract high rents from their shareholdings. We do this by analyzing initial public offerings of founding-family owned firms. Our unique sample is based on all IPOs floated from January 1970 to December 1991 in Germany. For those 105 firms, which we classify as *family-owned*, we analyze a rich data set on ownership structure, private benefits, control variables, and performance, up to ten years following the IPO.

The results are striking: Even a decade after going public, family owners continue to exercise considerable control. Furthermore, we show that there exist substantial private benefits of control in these firms and – for the first time, as far as we know – we empirically measure what these private benefits really are. Thereby we will argue that *substantial* in Germany is quite different from what was assumed in the well-known literature on private benefits before. No less important, we aim to sharpen a largely unexplored notion of *transferable vs. non-transferable* private benefits and its effect on control changes. This will shed new light on supposedly counter-intuitive empirical evidence from the recent literature on (German) corporate governance and control premiums. We also demonstrate how in Germany the separation of cash flow rights and voting rights via the issuance of dual-class shares is used to create controlling shareholder

structures in order to protect private benefits. Last but not least, we show how that this deviation from one-share-one vote is detrimental to minority shareholder wealth, by analyzing the long-run performance of family IPOs. We find a puzzling and significant underperformance of dual-class firms, both as measured by operating performance as well as stock returns. This finding – although challenging rational expectations and other empirical evidence – is robust to different measurement specifications and rigorous statistical testing. We argue that its sole satisfactory explanation is ex ante unanticipated expropriation of minority shareholders due to poor investor protection.

The rest of the paper is organized as follows: Section II motivates our paper by defining a typology of private benefits, presenting relevant research from the analytical literature, and reviewing recent empirical evidence. In section III we define the sample selection criteria, describe the data set, and give some legal and regulatory background on dual-class shares in Germany. In section IV we present empirical evidence on the evolution of ownership structure and control changes in German IPOs. In section V we analyze the nature of private benefits and report empirical results of its effect on the implementation of dual-class share structures at the IPO. Section VI finally describes the cost of the separation of cash flow rights and control rights by presenting results on long-run stock and operating performance. Section VII concludes with a summary of the major findings.

II.   Motivation

a.   What are private benefits? A typology of private benefits in the economics literature

In search of an economic definition it is always a good start to get advise from Adam Smith (1776, Book II, Ch. 2) who made the distinction that a landlord's "real wealth is in proportion, not to his gross, but to his net rent", the difference mainly deriving from his "private enjoyments

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and amusements". Two-hundred years later, Jensen and Meckling (1976) describe an owner-manager's "benefits he derives from pecuniary returns but also the utility generated by various non-pecuniary aspects of his entrepreneurial activities such as the physical appointments of the office, the attractiveness of the office staff, the level of employee discipline, the kind and amount of charitable contributions, personal relations ("friendship," "respect," and so on) with employees, a larger than optimal computer to play with, or purchase of production inputs from friends". These classic definitions already make clear that private benefits derive from the controlling ownership of assets and are to a large extent of a non-pecuniary nature. Demsetz and Lehn (1985) call the latter "amenity potential" and give as examples for non-pecuniary private benefits from the ownership of controlling sports teams or media companies "winning the world-series" and "influencing public opinion".[1]

Grossmann and Hart (GH (1988)) focus on pecuniary gains in takeover bids, assuming a well-functioning market for corporate control. They define as private benefits the synergy gains realized by an acquirer, the ability to freeze out minority shareholders below market value, perquisites of control, and the diversion of resources. In the same context of control contests, Bebchuk and Kahan (1990, p. 1090) provide a definition of private benefits as "any value captured by those controlling the company after the contest (and not shared among shareholders at large)". They give as examples high salaries, self-dealing or looting, the power to tailor company policy to one's personal interests, and psychological utility from running the company. In a numerical example they estimate the size of the private benefits at about 1:50 relative to total firm value, while GH set them in a relation of 1:10. One of the most recent definitions of private benefits is given by Coffee (2001) as "all of the ways in which those in control of a corporation can siphon off benefits to themselves that are not shared with the other shareholders", for

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[1] A paper by Djankov et al. (2001) focuses on private benefits deriving from ownership of media companies.

example, above-market salaries, non-pro rata payments, self-dealing transactions, insider trading, and the issuance of shares at dilutive prices.

As described by Johnson et al. (2000), pecuniary private benefits stem from "tunneling" of minority shareholders with self-dealing transactions (asset sales and transfer pricing, excessive executive compensation, loan guarantees), or without asset transfers (dilutive share issues, insider trading, creeping acquisitions, minority discriminating transactions). The same type of private benefits Modigliani and Perotti (2000) have in mind when they talk about asset transfers at arbitrary prices, transfer investments at deflated prices, and sales of control blocks without equal treatment. In line with this interpretation Hanouna et al. (2001) differentiate between the "egocentric drive to run an ever-larger enterprise", the implementation of preferred management policies, and the ability to engage in self-dealing: excessive salary, looting, and squeeze-outs.

It is usually an unexplained assumption in the empirical literature that family ownership serves as a proxy for the existence of private benefits (Amoako-Adu and Smith (2001); Franks and Mayer (2001)). For example, Goergen and Renneboog (2001) argue that founder involvement in terms of managerial responsibility and voting stake is a proxy for private benefits. But in most cases it is not explained what these private benefits to the family really are. A rare exception is given by Holmén and Högfeldt (2000) who mention the high social prestige that Swedish families derive from "running a firm with good reputation", the ability to promote relatives and offspring, and the chance to "do it my way", all of which are not easily transferable to another owner, e.g., an acquiring firm. These types of private benefits are of prime importance in our study. However it is extremely difficult to find adequate empirical proxies for them. This is probably one reason why most researchers in search of private benefits like Field and Karpoff (2001) use only raw proxies like salary & bonus.

To summarize, we can characterize private benefits of control as pecuniary or non-pecuniary, the former usually referred to as "tunneling" in the narrow sense of Johnson et al. (2000), i.e., the transfer of resources "out of firms to the benefit of those who control them". Most of the corporate control literature focuses on these tunneling activities. The second dimension on which we can differentiate private benefits is their transferability, both out of the company and to another controlling owner (rival). Exhibit 1 shows how along these two dimensions we define four types of private benefits: (i) *Self-Dealing* transactions are pecuniary benefits that result directly from asset transfers out of the company into the pockets of those who control, i.e., this is really "stealing" money from the other shareholders; (ii) *Dilution* activities increase controlling shareholder benefits without directly transferring assets, but nevertheless decrease minority shareholder wealth; (iii) *Amenities* are benefits seemingly unrelated to the pecuniary wealth of the controlling owner, but which can easily be transferred to another owner, e.g., there are plenty of people who would derive high utility ("joy") from owning the NY Times or the Yankees (even if they would never receive any positive cash flows); (iv) *Reputation* benefits are those that are hardest to transfer to another owner, because they take time to build, are owner-specific, and in many cases require family or at least geographical membership.

	Pecuniary ("Tunneling")	Non-pecuniary
High Transferability	**I. "Self-Dealing"** - Excessive (above-market) compensation - Diversion of resources - Asset transfers at arbitrary prices - Cheap loans and guarantees	**III. "Amenities"** - Winning the world series - Influencing public opinion - Owning a luxury brand - Physical appointments
Low	**II. "Dilution"** - Insider trading - Creeping acquisitions - Freeze-out and squeeze-out - Issuance of shares at dilutive prices	**IV. "Reputation"** - Social prestige - Family tradition - Promotion of relatives - Personal relations

Exhibit 1: A Typology of Private Benefits of Control

While most of the existing literature emphasizes tunneling and amenities, we also consider reputation benefits which are of prime importance in the case of founder- or family-controlled firms. Holderness (2001) argues that synergy gains or non-pecuniary "private benefits need not reduce the wealth of minority shareholders. This is an assumption of some analyses, but it is wrong". However, our analysis also builds on this assumption and we think it is economically right. The reason is that the existence of *any* private benefit – whether pecuniary or non-pecuniary – which is not shared with the minority shareholders gives the controlling owner an incentive to deviate from the maximization of total firm value. Indeed, she will take decisions based on her will to maximize the sum of firm value and the value of her private benefits. Jensen (2001) shows that "since it is logically impossible to maximize in more than one dimension, purposeful behavior requires a single valued objective function". Therefore, even amenities and reputation benefits will in some situations lead to the minority shareholders being worse off. We will empirically show that this assumption is valid on average by analyzing the wealth effects of ownership changes through IPOs.

b. Private benefits and ownership changes through IPOs

Analytical models of ownership structure changes focus on the role of an IPO in maximizing the proceeds that an initial owner obtains when selling equity to the public. By so doing the initial owner considers the value of the cash flow rights and the value of control rights, i.e. the private benefits.

In Zingales' (1995) model, the initial owner of a firm, in deciding whether to undertake an IPO and what fraction of ownership to retain, must balance two factors. By selling to disperse shareholders, he maximizes his proceeds from the sale of cash flow rights; by direct bargaining with a potential buyer, he maximizes his proceeds from the sale of control rights. The insider's

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ownership in public companies depends on the optimal combination of the value of cash flow rights and the value of private benefits that maximizes the incumbent owner's wealth. As a consequence, the initial owner maximizes his total proceeds by selling the company in a two-staged process.

Similarly, Mello and Parsons (1998) argue that the IPO is part of a complex multi-stage process of financing over time. Firms go public in several stages until they achieve their optimal ownership, beginning with an IPO for small investors, then selling a controlling block to another large shareholder, and finally offering a contingent sale of additional shares. Depending on the relative significance of shared and private benefits associated with the controlling block, it may be optimal for the seller to isolate voting rights from cash flow rights. However, as they point out "whether the valuation of the company to a large shareholder essentially comes from the private benefits of control or from improved future expected cash flows is an empirical question that is still to be resolved". This is one of the questions that we are interested in.

Bebchuk (1999) models the decision of a company's initial owner on whether to maintain control when the company goes public. The choice between concentrated and dispersed ownership of corporate shares and votes seems to be determined by the size of private control benefits. When private benefits of control are large, maintaining control of the company enables the initial shareholders to capture a larger fraction of the surplus from value-producing transfers of control. In order to maintain control of the firm, the initial owners can issue non-voting stock, thereby implementing a dual-class shareholder structure. He derives the testable hypothesis that such a separation of cash flow rights and voting rights will tend to be used in conjunction with a controlling shareholder structure but not with a dispersed ownership structure.

Bebchuk and Zingales (1999) show that private and social optimality might diverge when a value-maximizing entrepreneur makes the choice of ownership structure at the IPO stage. This

divergence might result from the external effect that the choice has on future buyers of control, because the ownership structure influences both the conditions under which control transfer might occur and the surplus that control buyers will capture. In their model the surplus from private benefits increases with the fraction of the cash flow rights sold to small shareholders. Although the above models differ in their exact predictions, they all show that private benefits are essential determinants of ownership and control patterns and may lead to dual class IPOs.

c. Private benefits and dual class share structures

Harris and Raviv (1988) show that dual class equity (as well as leverage) reduces the probability of the incumbent being voted out. Burkart et al. (1998) find that dual class capitalization intensifies competition among bidders for control and leads to higher bid prices.

Several empirical papers focus on the role of dual class share structures (DCS) as a mechanism to prevent unwanted control transfers through hostile takeovers (DeAngelo and Rice (1983); Jarrell and Poulson (1988); Lehn et al. (1990); Moyer et al. (1992)). DeAngelo and deAngelo (1985) show that vote ownership is an important motivation for managerial stock ownership. They find that managers of DCS firms hold a substantially greater percentage of voting shares than of shares with inferior voting rights, and that managers hold a substantially greater fraction of votes than of cash flow rights. They also show that family involvement (in top management positions) is significant in many DCS firms. The authors also document four case studies in which substantial acquisition premiums were paid for superior voting shares.

Denis and Denis (1995) find that firms with a majority ownership have a higher family involvement, and tend to have DCS. Taylor and Whittred (1998) show that Australian dual class IPO firms are smaller, less levered, and controlled by the founding family. For Canada, Amoako-Adu and Smith (2001) report that firms with concentrated family ownership prefer DCS. They

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find evidence of post-IPO conflicts between controlling and outside shareholders, which they attribute to attempts of the incumbents to expropriate private benefits.

These results show that the establishment of DCS goes along with concentrated ownership, driven by owner-managers or families who want to protect private benefits of control.

d. Private benefits and investor protection

According to La Porta et al. (LLSV (2000a, b)), the protection of minority shareholders by the legal system is the central key to determining the value of the private benefits of control and thereby the equilibrium ownership structures in a country. In numerous articles LLSV show that when laws are protective of outside investors and well enforced, investors are willing to finance firms, and financial markets are both broader and more valuable. LLSV (1997,1998) find that systematic differences among countries in the structure of laws and their enforcement, such as the historical origin of their laws, account for empirical differences in financing patterns.

Germany is a country where investor protection has been low in the past and thus the capital markets have been underdeveloped, with ownership structures characterized by concentrated shareholdings by families and institutional investors. A lot of empirical research has produced interesting but also conflicting results on the impact of this ownership pattern on control and performance of German firms.[2]

Franks and Mayer (2001) argue that, although there is no real takeover market in Germany, an active market in share blocks enables control changes and substitutes for an Anglo-Saxon style market for corporate control. However, they find empirically that families and other large shareholders preferably seem to act in their own interests, and that the gains from control transfers accrue solely to these holders of large blocks, not to minority shareholders, suggesting

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[2] See for example Edwards/Fischer (1994), Böhmer (2000), Gorton/Schmid (2000), or Franks/Mayer (2001).

the exploitation of private benefits of control. But block premiums are small compared to takeovers in the US, which the authors interpret as evidence of low overall private benefits of control in Germany. Given the general notion of weak investor protection in Germany, this is a very puzzling and counter-intuitive result to which their paper gives no clear answer. Complementary to these results, Jenkinson and Ljungqvist (2001) argue that the accumulation of hostile stakes acts as substitutive mechanisms for takeovers and that minorities are vulnerable to expropriation by majority owners in Germany. But again, they give no indication of the size or the real nature of private benefits in Germany.

Many papers in the empirical literature follow the approach of Zingales (1994) and aim to proxy the size of private benefits through the control premium that voting shares have over non-voting shares.[3] Modigliani and Perotti (1998) find that voting premiums are higher in countries with poor shareholder protection. Another study by Nenova (2000) in the spirit of LLSV shows that the control or voting rights premium differs significantly across countries and legal environments. In civil law countries such as Italy or France the value of control is generally higher than in common law countries like the US or the UK. Germany, although a civil law country, is characterized by control values of intermediate magnitude of 10 to 15 percent.[4] Hoffmann-Burchardi (1999) attributes this decrease to the introduction of the Takeover Code in July 1995. Fatemi and Krahnen (2000) find that the voting premium in Germany from 1990-93 was in excess of 40 percent and affected by trading liquidity as well as by the identity of the largest shareholder.

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[3] Kunz and Angel (1996) analyze voting rights premiums in Switzerland, Rydquist (1996) in Sweden, and Nicodano (1998) in Italy.
[4] However, Nenova's study covers only the year 1997, in which the voting rights premium in Germany has been extraordinarily low. In fact, the voting rights premium is highly volatile, ranging from 36 percent in December 1992 to 11 percent in June 1997 (the Nenova period), and it has fallen dramatically in the second half of the 90ies in Germany.

We argue that that the voting rights premium is at best a noisy and at worst a flawed measure of private benefits for several reasons. Besides the empirical difficulties in estimating and comparing the true premium through time and across countries, there are further problems with this approach. First, as Hanouna et al. (2001) argue, while the above studies "examine minority positions with voting rights relative to minority positions without voting rights", what really matters is the difference between the premium paid to minority shareholders and to blockholders in a control transfer. But even if one examines the pricing of block trades in the spirit of Barclay and Holderness (1989), a second and more important problem remains. That is the premium paid in a control transfer only reflects the value of private benefits that are transferable to another rival. As we will show, however, private benefits – particularly those deriving from reputation – are to a large extent non-marketable. A buyer would never pay a premium, since he would derive no benefit from them. These private benefits thus can only be protected through controlling ownership. We therefore apply a less straightforward but – as we think – more fruitful approach as to measuring the value of private benefits of control.

III.   Description of the IPO Sample 1970-1991

   a.   Why family-owned firms?

We focus our attention on IPOs of family-owned firms in Germany for the following reasons: First, a change in ownership structure by means of an IPO is a severe change in the governance of the corporation, because for the first time in history outside shareholders come into play. This makes IPOs an ideal ground for investigating potential corporate governance problems, arising because the controlling owners may want to preserve their private benefits at the expense of the new minority shareholders. Second, a family-owned firm comes closest to one in which ownership and control are not separated before the IPO, and also one where private benefits

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deriving from reputation supposedly are very important. With almost 60 percent of all IPOs from 1970 to 1991 in Germany, family-owned firms have long been *the* most typical ones to go public in Germany. Third, low shareholder protection in the German corporate governance system should cause high private benefits of control and thus give high incentives for concentrated ownership.

b. Sample characteristics and descriptive statistics

Table 1 gives a detailed overview on the characteristics of our sample. From January 1970 to December 1991 there have been 179 IPOs on the German capital market. For our analysis we restrict the sample to IPOs of family-owned firms. We classify a firm as *family-owned*, if one or more individual members of one or two families (together) own a fraction of the equity of at least 75 percent.[5] This precludes from being in the sample (i) Venture-backed or entrepreneurial firms; (ii) equity-carve-outs; (iii) privatized firms owned by the government or a federal institution; and (iv) firms with pre-IPO controlling shareholders other than families.[6] Of the remaining 105 IPOs of family-owned firms in the sample, 21 took place in the consumer goods industry, 15 in the automobile & machinery industry, and only 10 in electrical engineering & electronics; the distribution of industries is not different from that of other IPOs.

[Please insert table 1 about here]

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[5] This definition of family-owned (or family-controlled) is somewhat arbitrary. Generally, a family-controlled firm is one, whose corporate policy is dominated by the influence of at least one individual or family member. The only legal definition of family-controlled stock corporations is provided by the German "Betriebsverfassungsgesetz" (§ 76 Abs. 6 Satz 2 BetrVG, 1952): "Als Familiengesellschaften gelten solche Aktiengesellschaften, deren Aktionär eine einzelne natürliche Person ist oder deren Aktionäre untereinander im Sinne von § 15 Abs. 1 Nr. 2 bis 8 der Abgabenordnung verwandt oder verschwägert sind".

[6] The first group typically contains start-up firms in high-tech industries founded by a group of managing entrepreneurs. Although this seems to be the most preeminent type for IPOs in recent years, for example at the "Neuer Markt" segment of the Frankfurt stock exchange, we are not interested in high growth firms going public. For these firms (supposedly) an IPO is a necessary means of financing growth and just another step in the lifecycle, but we are interested in more mature firms, for which an IPO is a major decision and somehow a break with corporate history.

Table 2 compares our sample of family-owned firms (partitioned into firms with an without dual class) with the excluded group of other IPOs. The average initial return of the IPOs in our sample is 13.3 percent and significantly lower than for other IPOs. Our sample firms are also considerably older with an average (median) age of 63 (58) company years. Although European IPOs are generally older than their US counterparts, the firms in our sample are very mature, even as compared to European standards. Pagano et al. investigate a sample of 68 Italian IPOs floated on the Milan stock exchange from 1982 through 1992 and report an average (median) age of 33.4 (26) years. Rydqvist and Högholm (1995) report a European average IPO age of 40 years. Holmén and Högfeldt (2000) analyze a sample of 158 privately controlled Swedish IPOs from 1979 to mid 1997 and find an average age of 33 (23) years. For the US, the respective average age figures lie between five years for venture-backed firms (Gompers, (1996)) and 18 years for all IPOs (Field and Karpoff, (2001)).

[Please insert table 2 about here]

Investment bank reputation effects can largely be ignored, since *Deutsche Bank* advised almost half of the sample firms as underwriter of the IPO. Furthermore, 85 percent were advised by one of the five big German banks. During this time period competition among underwriters in Germany seems to have been modest and the advisory market dominated by those few banks.[7] In terms of capital raised there are no significant differences between our sample firms and other IPOs, with average gross proceeds ranging from 116 million deutschmarks for dual class firms to 141 million deutschmarks for other IPOs.

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[7] There were only 15 active underwriters advising on the 156 mandates in the period from 1970-90, whereas 42 underwriters where competing for 186 IPO mandates during 1991-98.

IV. Analysis of Post-IPO Ownership Changes and Dilution Effects

a. Evolution of ownership structure through time

For the firms in our sample, we track the ownership structures for an ex-post investigation period of 10 years following the IPO. A decade should be long enough to track all subsequent control transfers that somehow can be associated with the decision to go public. According to Bebchuk (1999), the choice between concentrated and dispersed ownership of corporate shares and votes is determined by the size of private control benefits. When private benefits are low, the initial owner chooses a dispersed ownership structure and sells out ordinary shares at the IPO. In countries – such as Germany – in which private benefits of control are large, the initial owner maintains a lock on control through the separation of cash flow rights and voting rights. The results of his model imply that separation of cash flow rights and voting rights (DCS) will tend to be used in conjunction with a controlling shareholder structure but not with a dispersed ownership structure. Thus, we expect to find non-voting shares issued at the IPO only in cases where the majority of voting rights is retained by the family shareholders.

This is indeed the case, as is evidenced by Table 3, which contains the development of the proportion of voting rights of families and other shareholders over time. In the cross section, the influence of family stockholders remains high. At first sight the family shareholders seem to have withdrawn from the company, because the average proportion of voting rights is only 40 percent. However, this depends on the share structure (DCS vs. non-DCS). The mean proportion of voting rights even ten (three) years after the IPO is still 52 (87) percent for DCS the 44 firms. This proportion is significantly different from the mean proportion of voting rights in the 61 non-DCS firms (32 and 54 percent respectively), supporting the hypothesis of Bebchuk (1999). In order to keep their private benefits of control in the long run, some family owners have established DCS.

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Those that did not issue non-voting preferred stock give up voting majority already five years after the IPO, on average.[8]

[Please insert Table 3 about here]

Another interesting pattern from table 3 is the fact that the free float is basically chosen at the time of the IPO and does not significantly change afterwards. The average free float increases only slightly from 21.5 percent to 26 percent after ten years for all IPOs. On the other hand, there is a significant increase in new blockholdings due to frequent transfers of controlling stakes. While at the IPO itself, almost no new blockholders step in, they own on average one third of the company after ten years. This is evidence for the prediction of the Zingales-model that controlling stakes are sold via subsequent block trades, but "never sold piecemeal" at the IPO, in order to extract control premiums for private benefits. Holmén and Högfeldt (2000) also find this pattern for Swedish IPO firms, and like us they "observe no single case of a gradual sell-off of a controlling block to general shareholders". This evidence supports the hypothesis of Brennan and Franks (1997) who find that controlling owners use underpricing to ensure oversubscription at the IPO, allowing them to reduce the block size of new shareholdings, in order to keep control uncontested.

b. Dilution of voting rights

The voting concentration decreases over time if wealth-constraint incumbents use outside equity to finance their investments. Given that founding-family members sell or relinquish all their preemptive rights in a seasoned equity offering, the upper bound of dilution is expressed by

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[8] Our results deepen those of a related study by Georgen and Renneboog (2001) who find that in German companies the average initial owner loses control 6 years subsequent to going public, but without considering the significant difference between DCS and NDCS companies.

$$\left(\frac{\sum_{t} \Delta Cap_t^{VotingShares}}{Cap_{PreIPO}^{VotingShares} + \sum_{t} \Delta Cap_t^{VotingShares}} \right) \cdot 100\% ,$$

where $\boldsymbol{D}Cap^{VotingShares}$ is the change in nominal capital of ordinary (voting) shares over time.

As shown in Panel A and B of Table 4, only nine firms adopt DCS following the IPO to prevent a further erosion of their voting rights concentration. Half of the DCS firms have also issued voting shares after the IPO. In these firms, the voting rights concentration moderately dilutes to 15 percent compared to 26 percent for non-dual class firms. This result suggests that a DCS tends to be used in order to access outside equity without diluting control.

Following Bergström and Rydqvist (1990), we calculate the average minimum percentage of equity that a controlling shareholder has to acquire in order to hold a 50 percent voting majority in DCS firms, i.e.,

$$\left(0.5 \cdot \frac{Cap^{VotingShares}}{Cap^{VotingShares} + Cap^{NonVotingShares}} \right) \cdot 100\%$$

German law restricts the issue of non-voting shares to 50 percent of total equity based on nominal value, i.e. a controlling shareholder has to acquire at least 25 percent of the cash flow rights. Panel C demonstrates that the average minimum equity fraction converges to one third. This indicates that the founding families do not minimize their equity fractions.

Panel D shows that DCS firms are less likely to return to capital markets for a seasoned equity offering. The lower frequency of seasoned equity offerings indicates that one of the goals of DCS is to protect the control benefits rather than to use outside equity without diluting control.

[Please insert Table 4 about here]

c. Control changes within ten years of going public

Table 5 exhibits the control status ten years after the IPO by comparing the proportions of voting rights held by the family and new blockholders. The most remarkable observation is that – even ten years after the IPO – there is only one company with dispersed ownership out of 105 that went public! Thus, control must be highly valuable in Germany and companies as described by Berle and Means (1932) are virtually non-existent.

Overall, the founding families continue to exercise considerable corporate control. In 65 percent of all cases the founding family is still involved, holding an average controlling stake of 63.1 percent. In the 29 DCS firms the family still holds a supermajority-voting stake ten years after the IPO. The founding families seem to either sell out completely or keep a controlling majority in their firms, using DCS as a means to retaining highly concentrated control. In the 35 of 100 cases with an exit of the incumbent family, control is transferred to a new controlling blockholder, holding 80.3 percent, on average. Of these 35 new controlling owners, only five are private investors while the other 23 are industrial companies and seven are asset management holdings. The latter two can be assumed to hardly derive any private benefits from amenities or reputation. Thus, either the new owners were solely interested in the cash flow rights of these firms, or the private benefits have been low, which made it easy for the families to transfer control, because there were no rents to preserve.

[Please insert Table 5 about here]

V. Private Benefits and the Implementation of Dual-Class Share Structures

a. To proxy the intangible – Measuring private benefits in Germany

How can we decide whether the value of private benefits is substantial or not and whether private benefits are transferable or non-transferable? Have potential rivals substantial private benefits from controlling a firm in Germany, as is suggested by the literature on hostile takeovers for the US, or do (non-transferable) amenities and reputation benefits only accrue to the incumbent owners and thus need to be protected through DCS? To shed light on these questions we want to take a closer look at Germany, for a long time the paradise world of private benefits.

The economic historian Berghoff (1997; 2001) documents an intriguing case study about what private benefits really are in Germany. He describes the corporate history of the small German stock corporation Hohner AG, a producer of harmonicas, quite successful in the global market. More interesting than the global marketing success, however, are the many examples of rent-seeking behavior of the Hohner family and its patriarch and managing owner, Matthias Hohner, who became the most important citizen of a small south-German town called Trossingen. Not only was Hohner by far the biggest employer in town, he also had all city councils on its payroll, and therefore de facto uncontested political power. Thanks to heavy monetary contributions, the entrepreneur, who had no formal education, also became doctor honoris causa, honorary senator, and even adjunct professor of the University of Tübingen. However, the Hohner corporation, i.e., its shareholders, had to spend huge sums to make its controlling owner happy through amenities and reputation building. Between 1949 and 1961 Hohner AG spent 11.7 million deutschmark into social contributions and philanthropic donations, as compared to aggregate net capital investments of only 13.5 million deutschmark and aggregate dividend payments of only 7.2 million deutschmark. In 1957, Hohner AG had its centennial corporate anniversary and spent over one million deutschmark in celebration activities alone.

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This amount was higher than the annual dividend paid out to shareholders and even higher than the net capital expenditures. In addition to that, corporate employees and alumni received 716,450 deutschmark in centennial gratifications. The celebrations, whose only true goal was to praise Matthias Hohner and his family, hosted more than 1000 guests from 33 countries and lasted three full working days. Finally, excess took its toll and the Hohner family had to pay the price for decades of pseudo-feudal living-style. In 1986, Hohner AG only avoided bankruptcy and liquidation, because its 14 lending banks accepted a moratorium and wrote off 10.6 million deutschmark in debt. In addition, the state of Baden-Württemberg, through its Prime Minister (and former city council of Trossingen) Erwin Teufel granted eight million deutschmark through hidden subsidies. Nevertheless, although Hohner AG could be rescued, the founding family lost not only their seat in the managing board but also saw their voting stake diluted from 60 to 30 percent through capital restructurings, thereby losing effective control of the firm. But their splendid regency lasted for 40 years of private amusements and enjoyments.

The Hohner case demonstrates that private benefits in German firms are not only substantial; they sometimes can be assumed to be much higher than the value of the cash flow rights. Furthermore, these private benefits are mainly what we call reputation benefits and not transferable to a rival (Who else wants to be King of Trossingen and pay a premium for it?). Imagine how large the value increase in cash flow rights under a new owner had to be, in order to make a control transfer look attractive for the incumbent family. Rather they would protect their benefits through DCS, in order to better expropriate their minority shareholders.

It should be clear now that these private benefits are of a different quality than those that GH, Bebchuk, and other researchers had in mind when writing about takeovers in the US. Consequently, we also need variables that are different from those used in the literature before to proxy for these private benefits. In the next sub-section we describe our wide range of proxy

variables used to predict the establishment of DCS and the probability of subsequent control transfers. We will also apply variables taken from the spatial economics literature (e.g., Black and Henderson (1999); Fujita, Krugman, and Venables (1999)) to capture for what we call the "small town" effect (or "Trossingen effect") in private benefits.

b. Data characteristics and probit methodology

We expect that the existence of private benefits (i) increases the likelihood of the establishment of DCS, and (ii) decreases the likelihood of control transfers. To test our propositions we run a set of probit model regressions. Table 6 gives the description of private benefits and control variables for our sample of family-owned firms used in our regressions. We apply proxies for all types of private benefits, with the exception of "dilution" activities, which are hardly observable and thus impossible to measure. The first group is reported in Panel A and includes several variables on management and supervisory board compensation, which proxy for "self-dealing"-type private benefits.

(i) *Total Board Compensation* is the aggregate amount of board members' inflation-adjusted compensation for the fiscal year before the IPO, as reported in the financial statement.

(ii) *Average Board Compensation* is the total inflation-adjusted management board compensation divided by the number of board members. Both compensation variables should be positively related to the likelihood of DCS establishment, given the private benefits derived from excess salary. However, since compensation is an easily transferable asset, it need not necessarily decrease the likelihood of a subsequent control change.

(iii) *Managing Ownership* is the number of management board members who are related to the founding family by blood or marriage. This variable could be also interpreted as a proxy for reputation private benefits, assuming that relatives are promoted.

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(v) *Supervisory Board Total Compensatio*n is the aggregate annual compensation of all supervisory board members for the fiscal year before the IPO, as reported in the IPO prospectus or the financial statement.

(iv) *Supervisory Board Basis Compensation* is the inflation-adjusted compensation paid to common supervisory board members. The compensation of the chairman and the vice-chairman is usually a multiple (double or triple) of the basis compensation. Both compensation variables should be positively related to the likelihood of DCS establishment.

(vi) *Board Size* is the number of the firm's supervisory board members.

(vii) *Monitoring Ownership* is the number of family members in the supervisory board and describes board representation by the founding family. This variable could be also interpreted as a proxy for reputation private benefits, assuming that relatives are promoted.

(viii) *Chairman* is a dummy set to one if a family member holds the chairman position, and is a proxy for the family's influence and active role in disciplining management.

(ix) *Monarchy* is a dummy set to one if one family is the sole owner of the firm and zero if there exists a second blockholder. This variable is intended to capture the value of mono-ownership, i.e., independence from other influential shareholders, and should increase the likelihood of DCS choice.

Second, we construct one explanatory variable capturing the influence of "amenities"-type private benefits.

(x) *Luxury Brand* is a dummy variable set to one, if the firm name reflects highly prestigious luxury consumer goods, and zero otherwise.[9] This variable should be positively

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[9] The measurement of the luxury-brand dummy may seem somewhat subjective, since there is no clear-cut criterion. However, there is a general consensus in Germany about what is a luxury brand and what is not, e.g., everybody would agree that Porsche is a luxury car whereas VW is not. In our sample, Etienne Aigner, Hugo Boss, Escada, Porsche, and Jil Sander all are fashionable luxury brands which not only have high intangible value, but whose ownership is also associated with high social prestige in Germany.

related to DCS likelihood (in order to preserve this amenity), but not necessarily has to decrease the likelihood of a control change (because there are rivals willing to pay a premium).

The third group of explanatory variables consists of proxies that reflect the type of private benefits stemming from what we call reputation.

(xi) *Population* is the number of inhabitants in the city district where the firm's headquarter is situated. Following spatial economics theory, the logic behind this proxy is that the smaller the city the higher are the private benefits derived from being a big employer and well-respected citizen in town ("small town" effect). Vice versa, we expect the DCS (control change) likelihood to be strictly decreasing (increasing) in population.

(xii) *Working Population* is an alternative spatial proxy measuring the number of employees in the city district of the firm's headquarter.

(xiii) *Name* is a dummy set to one if the family name is part of the firm name, and zero otherwise. Equality of firm and family name should increase (decrease) DCS (control change) likelihood.

The fourth group includes a set of control variables that also may affect the implementation of DCS and subsequent control transfers.

(xiv) *Age* is firm age. Although a control variable in the first place, it could be also interpreted as a proxy for path-dependent reputation benefits, e.g., family tradition.

(xv) *Risk* is the standard deviation of monthly stock returns in the first 36 months after the IPO.

(xvi) *Equity Financing* is the ratio of book value of equity to total bank loans, immediately before the IPO, as reported in the prospectus, and is meant to proxy for the independence from bank loan financing.

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(xvii) *Assets* is the natural logarithm of the inflation-adjusted book value of assets, as reported in the IPO prospectus. Since more assets open more opportunities to divert profits and to consume perquisites, and thus higher prestige, this could also be interpreted as a general proxy for the size of private benefits.

(xviii) *Profitability* is the ratio of earnings to total assets in the fiscal year prior the IPO.

(xix) *Growth* is the change in the operating performance over the period of three years following the IPO.

(xx) *Family Vote Ownership* is the percentage of voting rights held by the founding family at the IPO.

(xxi) *Supervisory Board Seat* is a dummy variable set to one if a family member is in the management (supervisory) board, and zero otherwise.

(xxii) *Interaction Dummy 1* (*Interaction Dummy 2*) is the product of *Total Board Compensation* (Supervisory Board Compensation) and *Supervisory Board Seat.*

The following two dependent variables used in our probit regressions.

(xxiii) *Control Change* is a dummy variable set to one, if the firm is sold by the family within ten years of the IPO, and zero otherwise.

(xxiv) *Dual Class IPO* is a dummy variable set equal to one if the firm has issued non-voting shares at the IPO, and zero otherwise.[10]

Table 6 shows means and medians of our private benefits and control variables. With two exceptions, there are no marked differences between DCS and non-DCS firms. First, the executives' pecuniary compensation is significantly higher in DCS firms than in all other (both family and non-family) IPOs. Secondly, particularly DCS firms seem to own luxury brands.

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[10] Since we use this variable in the probit regressions both as a dependent variable in the DCS Equation and as an explanatory ownership variable in the Control Change Equation, we have to control for endogeneity. We therefore use a seemingly unrelated bivariate probit methodology as suggested by Greene (1999).

[Please insert Table 6 about here]

c. Private benefits and the likelihood of DCS and subsequent control changes

Tables 7a and 7b report the results from our probit regressions using the variables described above. We analyze (i) the choice of DCS and (ii) the likelihood of subsequent control changes by first (i) running separate regressions for DCS models, and then (ii) applying seemingly unrelated bivariate probit regressions for DCS and control change equations.

[Please insert Table 7a about here]

For the separate probit regression analysis of the choice of DCS we estimate four models: M1 and M2 only consider pecuniary private be nefits (alternatively, management vs. supervisory board compensation); M3 models only non-pecuniary private benefits; and M4 is the complete model. Management board compensation (M1) turns out to work much better than supervisory board compensation (M2), which is intuitive, so we scrap the latter and stick to the former.

For the analysis of the likelihood of a subsequent control change we have to account for the fact that DCS is both a dependent variable as well as an explanatory variable for the likelihood of a change in control. Therefore we run the model for the DCS analysis and the control change analysis simultaneously by estimating a seemingly unrelated bivariate probit regression model. Since the separate DCS estimation models show no differences with respect to the signs or significance of our regression coefficients, we only refer to the results from the seemingly unrelated bivariate probit regression analysis, as reported in Table 7b.

[Please insert Table 7b about here]

The choice that an IPO firm will establish DCS at the IPO is *positively* and significantly related to (i) the compensation of the management board ("self-dealing"); to (ii) sole ownership by a single family ("monarchy"); and to (iii) the preeminence of a luxury brand ("amenities").

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DCS likelihood is significantly and *negatively* related to (i) the population of its headquarter ("smalltown effect"); and to (ii) the age of the company. The latter finding, though only significant at the ten percent level, is somewhat puzzling.

The likelihood of a *control change* in the ten years following the IPO *decreases* (i) when DCS is established at the IPO; (ii) in the size of the population; and (iii) with firm age. All other variables turn out to be not significantly related to either DCS or control changes.

We can therefore conclude that DCS is established at the IPO in order to preserve private benefits of control, consistent with the hypothesis of Bebchuk (1999). In addition, DCS also makes control transfers less likely. These results are consistent with those of Goergen and Renneboog (2001) who also find that the probability of retaining substantial control concentration augments when non-voting shares are issued at the flotation.

The most remarkable obstacle to a change in control, however, is when a family firm is headquartered in a small town. As in the Hohner case, private benefits from reputation must seem so substantial relative to all future synergy benefits and cash flow increases induced by potential rivals, that giving up control must be prevented at any cost. This is especially true for older firms who have already acquired reputation through time. Furthermore, the existence of *transferable* private benefits leads to the choice of DCS, but does not discourage subsequent sales of control. The reason is that transferable benefits like the amenities stemming from luxury brands – although it pays to protect them through DCS – will find interested buyers who are willing to pay a premium for them, while non-transferable benefits will not.

A final question remains: who is going to pay for the private benefits of the controlling shareholders? We suspect that the minority shareholders have to suffer for the deviation from one-share-one vote in favor of the founding families. We will try to answer this question by looking at the long-run performance of our sample IPOs in the next section.

VI. The Cost of Dual Class: Post-IPO Long-run Stock and Operating Performance

a. Long-run performance methodology

Minority shareholder expropriation can hardly be detected directly. Therefore we try to measure its effects indirectly by looking at the long-run returns that accrue solely to the cash flow rights. The controlling owners will always maximize the sum of the value of their cash flow rights and the value of their private benefits. Thus, when private benefits are substantial, this should distort decisions away from the maximization of shareholder value.

We have seen that DCS is established in order to protect private benefits of control. To detect a possible negative impact of DCS on performance, we examine long-term stock returns in the first three years following the IPO. In calculating long-run stock returns, methodological problems arise as to (i) how the monthly abnormal returns of individual securities should be aggregated over firms and over time; (ii) how the mean abnormal return should be calculated; and (iii) how the expected rate of return should be estimated. When aggregating returns over time the empirical researcher has to decide between using *cumulative abnormal returns* (CARs) vs. *buy-and-hold abnormal returns* (BAHRs). CARs are most commonly used in daily event studies. When it comes to calculating long-run abnormal stock returns, BAHRs are the preferred choice.[11]

Therefore, our calculation of the 36-month long-run stock performance is based on the BAHR formula, i.e., the difference between the result of buy-and-hold investments in IPO stocks and the result of buy-and-hold investments in a benchmark portfolio. Following Dimson and Marsh (1986), we correct for the size effect by using size portfolios as expected return, because otherwise it may adversely affect the results of the long-run return calculations.[12] The size

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[11] See Barber/Lyon (1997) for the differences of CAR and BHAR methods and Stehle et al. (2000) for the discussion of the pros and cons of different BHAR procedures.

[12] For example, while Ljungqvist (1997) finds high negative abnormal returns up to -12.11 percent in the 36 months after the IPO in Germany, Stehle et al. (2000), using size portfolios, show that the average abnormal return is close to zero.

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portfolio approach may also be more appropriate than the control stock method for samples with a small number of observations. For our study, we construct ten size portfolios of all stocks traded on the official market of the Frankfurt Stock Exchange. We then construct BHAR to analyze the performance of DCS and non-DCS firms:[13]

$$BHAR_{i,t=36} = \frac{1}{N}\sum_{i=1}^{N}\left(\prod_{t=1}^{36}\left(R_{i,t}^{IPO}+1\right)-\prod_{t=1}^{36}\left(R_{i,t}^{SP}+1\right)\right)=\frac{1}{N}\sum_{i=1}^{N}\left(W_{i,T}^{IPO}-W_{i,T}^{SP}\right)$$

where

$BHAR_{i,t=36}$ = Buy-and-hold abnormal return for the time period $t = 1$ to $t = $T;

$W_{i,T}^{IPO(SP)}$ = value at T of a buy-and-hold investment of one deutschmark in stock i (in the corresponding benchmark size portfolio) at the time of its IPO ($t = 0$),

$R_{i,t}^{IPO}$ = Total rate of return on stock i in month t after its IPO;

$R_{i,t}^{SP}$ = Rate of return on a value-weighted size portfolio in month t after stock i's IPO.

For the testing of statistical significance we apply the procedure of Lyon et al. (1999) who propose the use of a skewness-adjusted t-statistic, in order to prevent misspecification of tests. We also determine the critical t-values for rejection of the null by applying a bootstrap methodology as proposed by Ikenberry et al. (1995).

b. Operating performance methodology

We also use an operating performance approach as an alternative method to detect underperformance. For the US, Jain and Kini (1994) find a positive link between operating performance and the proportion of shares retained by managers after the IPO. A decrease in

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[13] Other long-run performance studies advocating the calculation of buy-and-hold abnormal returns are Cusatis/ Miles/ Woolridge (1993), Barber/Lyon (1997), and Cowan/Sergeant (1997).

managerial shareholdings following the IPO potentially leads to a worsening of managerial incentives and therefore to bad long-run performance. On the other hand, Mikkelson et al. (1997) do not find any consistent relation between performance and changes or levels of ownership at different points over the ten years following the IPO. Goergen (1999) studies ownership retention in German and UK IPOs, and finds that ownership retention six years after the flotation is a function of four factors: total risk, growth rate of assets, involvement of the founder, and DCS. He concludes that the long-run performance of IPOs is not correlated with ownership retention. Unlike these studies, we do not relate operating performance to ownership concentration, but to the establishment of DCS as proxy for the protection of private benefits, as shown in Section V.

In order to measure abnormal operating performance, one must choose an appropriate performance measure, a benchmark generating expected performance, and a powerful statistical test. We employ earnings as disclosed in the financial statements as a measure of the productivity of the firm's assets. Under German law, earnings are the basis of the dividend payments to shareholders. Therefore, earnings are the better proxy in order to analyze the cash flow rights of minority shareholders than the operating income as recommended by Barber and Lyon (1996). Since the market value of assets is not reported in the financial statements, we scale earnings by end-of-period assets based on reported book values, to compare performance across firms.

By matching sample firms to a benchmark, Barber and Lyon (1996) control for the mean-reversion tendency of performance using a change model. They argue that change models always dominate level models in detecting abnormal operating performance. The change model approach includes the firm's past performance plus the change in the benchmark's performance in estimating the expected performance. The abnormal operating model that we use is given by

$$AP_{it} = P_{it} - E(P_{it}) \text{ with } E(P_{it}) = P_{i,t-1} + \left(PI_{it}^{j} - PI_{it-1}^{j}\right),$$

where P_{it} is the performance of firm i in year t, and

P^j_{it} is the average performance of the corresponding benchmark size portfolio.

An operating performance can only be considered 'abnormal' relative to an appropriate benchmark. As for the abnormal stock performance model, we construct again the same set of ten diversified control portfolios for companies in different capitalization classes. Finally, since Barber and Lyon (1996) argue that non-parametric Wilcoxon signed-rank test statistics are uniformly more powerful than parametric t-statistics, we use them to verify the significance of our results.

c. Results

On average, the long-run stock performance of the IPO firms in our sample is about minus eight percent (Table 8). However, this underperformance can be attributed merely to the under-performance of DCS firms. The performance of non-DCS IPOs is neutral and not significantly different from zero. The underperformance of DCS firms in our sample is much higher with almost minus 20 percent. The difference in means between the two subsamples is statistically significant at the five percent level, and the economic insight of this pattern is strong. Underperformance is especially severe for DCS firms where the founding family still holds a supermajority ten years after the IPO.[14]

This pattern is paralleled by significant differences in operating performance. While all IPOs significantly underperform relative to their benchmark firms, the underperformance of DCS firms is particularly severe with minus four percent. This is a striking result, because as can be

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[14] We further verify our results by controlling with a benchmark portfolio that consists of non-voting shares without supermajority shareholdings.

seen from Table 6, at the time of the IPO there have not been any differences in operating performance (*profitability*) between DCS and non-DCS firms.

These differences in operating performance contrast results reported by Field and Karpoff (2001) for 1,019 IPOs in the US. They find that although takeover defenses (which DCS in effect are) protect private benefits of control, "there is no evidence that they degrade operating performance". Thus, in the US a high degree of investor protection seems to prevent expropriation, while in Germany, we can find rent-seeking behavior of controlling owners at the expense of minority shareholders in DCS firms. This is perfectly in line with the arguments of LLSV and a viable explanation of these puzzling performance differences.

[Please insert Table 8 about here]

To test the robustness of minority shareholder expropriation as an explanation, two methodological issues need to be discussed here. First, there is the problem of endogeneity. In a related study Goergen (1999) studies ownership retention in German and UK IPOs, the determinants of ownership retention and its impact on IPO long-term performance. He finds that the long-run performance of IPOs is not correlated with ownership retention. The overall evidence he suggests is that the poor long-term performance of IPOs cannot be explained by agency conflicts caused by the reduction in ownership by the original shareholders.[15] He agrees with the classic argument made by Demsetz and Lehn (1985) that ownership is endogenous and always optimally chosen as to maximize firm value. What has to be considered, though, is that

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[15] There are several methodological issues to discuss with his work. First, he estimates the long-run performance with Buy-and-hold returns computed by using a market model. Then a stepwise OLS regression technique is used for the ownership retention model. Alternative specifications included variables such as the categories (e.g. firms which offer less than 25 per cent of the total equity (voting plus non-voting equity) in the IPO) and the natural logarithm of one plus the fraction of share capital offered in the IPO as used by Ljungvist (1997), as well as quadratic specifications of the ownership variables. He applies a dynamic panel data regression model to analyze the link between insider retention and an accounting measure of performance based on cash flows. However, his and his work with Renneboog (2001) has only 58 observations of German IPOs to investigate, and is therefore unable to account for the importance of dual-class share issues.

ownership is chosen by the initial owner as to maximize the sum of firm value (cash flow rights) and their private benefits (control rights). Thus endogeneity is irrelevant here, since performance (of the cash flow rights) is only to be seen from the perspective of the minority shareholders, for whom it is exogenously given.

But why then would anyone buy these non-voting shares at the time of the IPO? In a rational expectations framework the minority shareholders should discount the price of DCS shares in order to reflect the future expropriation by the initial owners. Are irrational expectations at work here? Modigliani and Perotti (1998) analytically show that one cannot argue that "small investors anticipate the future dilution of their claims and price it correctly". In a formal model they illustrate an ex ante effect of poor shareholder protection in unreliable enforcement regimes, such as the German system. Given that low investor protection led to an underdeveloped capital market in Germany, those small investors that nevertheless entered might have been expropriated.

7. Conclusion

The protection of private benefits of control is an important consideration when initial owners sell their firms in an IPO. This is especially true for a country like Germany where legal protection of minority shareholders is low. To shed light on this, we analyze a sample of 105 initial public offerings of founding-family owned firms from 1970 to 1991 on German stock exchanges and track their fate up to ten years following the IPO. Our results indicate that control is highly valuable to German family owners: ten years after the IPO, they still exercise considerable control, or they have sold their controlling stake completely. Nevertheless, in a third of all cases control changes *do* occur within ten years, which is not so different from figures reported on IPO-related control transfers in other countries. Changes of control are therefore

common in Germany, as is also evidenced by Franks and Mayer (2001). But what is the value of private control benefits in Germany?

To answer this question, we derive a typology of private benefits of control from the literature and empirically measure which of these private benefits really are substantial in Germany: these are excessive management compensation (*self-dealing*), enjoyment through association with luxury goods (*amenities*), and all the amusements and social benefits derived from being the King of a small town (*reputation*). In order to preserve these private benefits, German family owners create controlling shareholder structures and separate cash flow rights and voting rights at the IPO via DCS. But even in the presence of DCS, transferable private benefits of the self-dealing and amenities types are sold to new blockholders, who are willing to pay a premium for them. On the other hand, substantial reputation benefits are hardly transferable and thus lead the family to keep control in order to preserve them and engage in rent-seeking activities. The true value of control in Germany therefore cannot be measured solely in terms of voting rights differentials or bid premiums in control transfers, since these do not capture the value of non-transferable private benefits.

Our results are supportive evidence for the models of Zingales (1995), Mello and Parsons (1998), and Bebchuk (1999). Our findings also yield support for the legal finance approach of LLSV and others. We find a puzzling and significant long-run underperformance of DCS IPOs, where deviations from one-share-one-vote are lead to underperformance. This underperformance is paralleled by inferior operating performance and robust to rigorous statistical testing. We argue that the only satisfactory explanation is ex ante unanticipated expropriation of minority shareholders due to poor investor protection in Germany, as suggested by Modigliani and Perotti (1998). If this were not the underlying reason for the significant underperformance of DCS IPOs,

we would have found yet another puzzling capital market anomaly. However, the final judgment on the real nature of this underperformance pattern is left to the reader.

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Table 1
Ownership-Based Classification of German IPOs 1970-1991

The table includes all 179 initial public offerings floated between 1970 and 1991 on a German stock exchange. We define an enterprise as a family-owned firm, if members of a family group own at least 75 percent of the voting rights before the IPO. An entrepreneurial firm is any company classified as developmental stage and not older than ten years at the IPO. Industry code of the Karlsruher Kapitalmarktdatenbank DFDB: chemicals & pharmaceuticals (51), electrical engineering & electroncis (61), utilities (70), banks & insurances (81), automobile & machinery (91), steel (101), non-ferrous metals, wire & cable factories (110), construction (130), department stores (140), consumer goods, food, beverages, paper (150), entertainment & leisure (160), transportation & logistics (170), holdings (180), miscellaneous industries (190).

IPO by Ownership-Type	N	Percent of Total	51	61	70	81	91	101	110	130	140	150	160	170	180	190
TOTAL	**179**	**100.0**	6	18	1	6	23	1	2	10	3	27	1	2	21	58
Non family-owned firms																
Venture-Backed or Entrepreneurial Firms	14	7.8		5										1	3	5
Equity Carve-outs	13	7.3		1		2	2	1			1	1			2	3
Privatizations	9	5.0			1	3	1								2	2
Firms owned by another Controlling Shareholder	32	17.9		2		1	4			2	1	5			7	10
Family-owned Firms without Supermajority (< 75% of voting rights)	6	3.3	1			1				2				1	1	
Family-owned Firms (our sample)	**105**	**58.7**	5	10			15		2	6	1	21	1	1	6	37
Non Dual-class IPOs	61	58.1	1	8			7		1	3	1	14	1		5	20
Dual-class IPOs	44	41.9	4	2			8		1	3		7		1	1	17
Votings rights at IPO > 75 percent	37	35.2	4	1			8		1	3		6		1		13
Listing of all Dual-class shares	2	1.9		1												1

Table 2
Means (Medians) of Offerings and Firms Characteristics for Firms Issuing IPOs during the Period 1970-1991

The table includes all 179 initial public offerings floated between 1970 and 1991 on a German stock exchange. We define an enterprise as a family-owned firm, if members of a family group own at least 75 percent of the voting rights before the IPO. An entrepreneurial firm is any company classified as developmental stage and not older than ten years at the IPO. Total gross proceeds and net gross proceeds are inflation-adjusted (CPI basis 1991) [***],[**],[*] indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: Descriptive Statistics	Non Family-owned Firms	Family-owned Firms		
		All	Dual-class Firms	Non Dual-class Firms
Company Age (years)	46.9	62.6	54.6	68.4
	(33.5)	(58.0)	(51.0)	(68.0)
Total gross proceeds from offering (DM million)	141.4	127.6	116.3	135.7
	(56.7)	(48.9)	(69.8)	(37.6)
Net proceeds to company (DM million)	50.2	60.7	82.3	45.0
	(4.8)	(23.2)	(34.3)	(21.4)
Initial return	20.9%	13.3%	15.9%	11.4%
	(5.3%)	(6.8%)	(8.3)	(6.2%)
Competition among underwriters				
underwritten by one of the five biggest banks	42	90	38	52
	32.4%	85.7%	86.4%	85.2%
underwritten by Deutsche Bank	24	50	22	28
	32.4%	47.6%	50.0%	45.9%
Sample size	74	105	44	61

Panel B: Test statistics	Mean difference for	
	Non-Family vs. Family-owned Firms	Dual-class vs. Non Dual-class Firms
	Two-sample t-Test (t value)	
Company Age	-2.49[**]	-1.73[*]
Total gross proceeds	0.35	-0.36
Net proceeds	-0.49	1.82[*]
Initial return	1.67[*]	1.43
	Two-sample Test of Proportion (z value)	
underwritten by one of the five biggest banks	-4.34[***]	-0.16
underwritten by Deutsche Bank	-2.03[**]	-0.42

Table 3
Evolution of Ownership Structure through Time

The sample consists of 105 initial public offerings of family-owned firms with supermajority shareholdings floated between 1970 and 1991 on a German stock exchange. Family shareholders are defined as one or more individual members of the same family jointly holding a fraction of the equity. Other old shareholders are institutional shareholders, management, employees, and individual shareholders include pre-IPO managerial ownership, and other privately placed shares. New blockholders are domestic firms, foreign firms, banks and insurance companies, trust and investment companies and individuals.

| | Mean (Median) proportion of voting rights held by old and new shareholders (percent) | | | | | | t-value |
	All IPOs		Dual-class Firms		Non Dual-class Firms		
Panel A: Family Shareholders							
Pre-IPO	98.2	(100.0)	97.7	(100.0)	98.6	(100.0)	0.73
At the IPO	77.1	(75.1)	97.5	(100.0)	62.3	(66.7)	-13.36[***]
3 years after the IPO	67.9	(70.0)	87.0	(100.0)	54.2	(59.0)	-7.47[***]
5 years after the IPO	57.9	(63.0)	72.9	(95.1)	47.0	(51.0)	-4.42[***]
10 years after the IPO	40.4	(38.9)	51.8	(60.0)	31.7	(27.0)	-2.77[**]
Panel B: Other old shareholder							
Pre-IPO	1.8	(0.0)	2.3	(0.0)	1.4	(0.0)	-0.96
At the IPO	0.9	(0.0)	1.3	(0.0)	0.7	(0.0)	-0.94
3 years after the IPO	0.5	(0.0)	0.9	(0.0)	0.6	(0.0)	-1.12
5 years after the IPO	0.4	(0.0)	0.6	(0.0)	0.2	(0.0)	-0.70
10 years after the IPO	0.1	(0.0)	0.0	(0.0)	0.2	(0.0)	0.87
Panel C: New Blockholders							
At the IPO	0.6	(0.0)	0.0	(0.0)	1.0	(0.0)	1.40
3 years after the IPO	7.2	(0.0)	4.0	(0.0)	9.4	(0.0)	1.41
5 years after the IPO	16.9	(0.0)	15.9	(0.0)	17.7	(0.0)	0.29
10 years after the IPO	33.5	(11.0)	33.9	(5.0)	33.1	(14.1)	-0.10
Panel D: Free Float							
At the IPO	21.5	(23.0)	1.2	(0.0)	36.0	(33.3)	14.64[***]
3 years after the IPO	24.4	(25.0)	8.2	(0.0)	35.8	(34.7)	10.17[***]
5 years after the IPO	24.9	(25.0)	10.6	(0.0)	35.1	(36.0)	7.81[***]
10 years after the IPO	26.1	(24.5)	14.3	(5.0)	35.0	(34.0)	4.89[***]
Sample size	105		44		61		
Bankruptcies (10 years after the IPOs)	5		1		4		

Sources: IPO database at the Institut of Banking, Stock Exchanges, and Insurance, Humboldt-Universität zu Berlin; Hoppenstedt; Saling-Aktienführer; Commerzbank "Wer gehört zu wem".

Table 4
Evolution of Dual-Class Equity, Dilution of Voting Rights, and Minimum Equity Fraction

The sample consists of 105 initial public offerings of family-owned firms with supermajority shareholdings floated between 1970 and 1991 on a German stock exchange. The minimum equity fraction is one that the controlling shareholder has to acquire to obtain precisely the 50%-fraction of voting rights.

	After the IPO	Years after the IPO			
		1 year	3 years	5 years	10 years
Panel A: Evolution of Dual-class companies					
only listing of non-voting stocks	42	39	36	35	26
Listing of all dual-class stocks	2	6	12	15	25
Bankruptcy	0	0	0	0	2
TOTAL	44	45	48	50	51
Panel B: Maximum Dilution of voting rights through Primary or Seasoned offerings					
All Family-owned IPOs (N=105)	11.0%	11.8%	14.1%	15.7%	21.3%
Non dual-class firms in the first 10 years after the IPO (N=52)	17.7%	19.7%	20.6%	22.2%	26.2%
Dual-class IPOs (N=44)	0.5%	1.2%	4.5%	6.3%	15.0%
Firms adopted dual-class equity after the IPO (N=9)	24.1%	24.1%	24.1%	24.1%	24.1%
Panel C: Minimum equity fraction					
Dual-class IPOs (N=44)	30.5%	30.5%	29.6%	29.9%	31.8%
Firms adopted dual-class equity after the IPO (N=9)	50.0%	47.5%	45.3%	39.3%	33.6%
Panel D: Frequency of post IPO Seasoned Equity Offers (SEOs) by issuing ordinary shares	**All**	**Dual-class Firms**		**Non Dual-class Firms**	
Number of firms made at least one SEO during the ten years after the IPO	43 (40.9%)	10 (24.4%)		33 (54.1%)	
Number of SEOs	83	17		66	

Table 5
Control Status 10 Years After the IPO

The sample consists of 105 initial public offerings of family-owned firms with supermajority shareholdings floated between 1970 and 1991 on a German stock exchange. In the first ten years after the IPOs five companies went bankruptcy. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: All Firms	Mean (Median) of Voting rigths ten years after the IPO	t-value (p-value)	N
Family	40.0% (38.9%)	0.94	100
New Blockholder	33.5% (11.0%)	(0.347)	
Panel B: Firms where founding family is still involved			
All shares			
Family	63.1% (63.7%)	11.23***	65
New Blockholder	7.1% (0.0%)	(0.000)	
Issuing Ordinary shares at the IPO			
Family	51.7% (51.3%)	7.22***	36
New Blockholder	6.9% (0.0%)	(0.000)	
Issuing Non-voting shares at the IPO			
Family	76.8% (86.0%)	9.64***	29
New Blockholder	7.4% (0.0%)	(0.000)	
Panel C: Control Change with exit of founding family			
Family	0.0% (0.0%)	-21.32***	35
New Blockholder	80.3% (90.8%)	(0.000)	
Industrial Company	84.2% (90.8%)		23
Asset Management Holding	84.9% (95.6%)		7
Private Investor	51.6% (50.0%)		5
Dispersed ownership	0.0% (0.0%)		1

Table 6
Means (Medians) of Private Benefits and Control Variables for IPOs of Family-owned Firms During the Period 1970-1991

The sample consists of 105 initial public offerings of family-owned firms with supermajority shareholdings floated between 1970 and 1991 on a German stock exchange. ***, **, * indicate significance at the 1%, 5%, and 10% level, based on a two-sample t-test (t-value) and a two-sample test of proportion (z-value), respectively.

Panel A: "Self-Dealing" Private Benefits	All	Dual-class Firms	Non Dual-class Firms	t-value/ z-value [z]
Management board membership and compensation				
Total Board Compensation (thousands)	1,705.6 (1,459.6)	1,990.9 (1,529.3)	1,497.7 (1,314.3)	-2.02**
Average Board Compensation (thousands)	536.4 (470.8)	590.5 (509.8)	496.9 (438.1)	-1.33
Managing Ownership	0.9 (1.0)	1.05 (1.0)	0.84 (1.0)	1.26
Supervisory board membership and compensation				
Supervisory Board Total Compensation (thousands)	175.2 (55.3)	311.2 (55.6)	77.1 (52.7)	-1.21
Supervisory Board Basis Compensation (thousands)	16.5 (10.5)	24.8 (10.7)	10.5 (10.3)	-1.19
Board Size	6.2 (6.0)	6.4 (6.0)	6.1 (6.0)	-0.56
Monitoring Ownership	0.6 (1.0)	0.7 (1.0)	0.6 (1.0)	-0.18
Chairman	0.2 (0.0)	0.2 (0.0)	0.3 (0.0)	0.50 [z]
Monarchy	0.6 (1.0)	0.7 (1.0)	0.6 (1.0)	-1.37 [z]

Table 6 (contd.)
Means (Medians) of Private Benefits and Control Variables for IPOs of Family-owned Firms During the Period 1970-1991

The sample consists of 105 initial public offerings of family-owned firms with supermajority shareholdings floated between 1970 and 1991 on a German stock exchange. ***, **, * indicate significance at the 1%, 5%, and 10% level, based on a two-sample t-test (t-value) and a two-sample test of proportion (z-value), respectively.

Panel B: "Amenities" Private Benefits	All	Dual-class Firms	Non Dual-class Firms	t-value/ z-value [(z)]
Luxury Brand	4.8 % (0.0%)	9.1 % (0.0%)	1.6 % (0.0)	1.77[*(z)]
Panel C: "Reputation" Private Benefits				
Population (thousands)	360.8 (60.8)	402.8 (56.6)	303.1 (65.2)	0.86
Working population (thousands)	172.9 (30.5)	153.3 (28.1)	187.0 (30.7)	0.65
Name	59.0 % (100.0%)	63.6 % (100.0%)	55.7 % (100.0)	-0.81[(z)]
Panel D: Control Variables				
Age	62.6 (58.0)	54.6 (51.0)	68.4 (68.0)	1.73[*]
Risk	8.6% (8.2%)	8.6% (8.2%)	8.6% (8.0%)	0.08
Equity Financing	1.8 (0.2)	0.7 (0.1)	2.5 (0.4)	0.86
Assets (DM million)	316.9 (114.1)	391.1 (114.1)	263.4 (114.1)	-1.29
Profitability	6.5% (4.7%)	6.7% (4.8%)	6.4% (4.5%)	-0.19

Table 7a
Probit Regression Analysis of Choice of Dual-Class Equity

The sample consists of 105 German family-owned firms going public between 1970 and 1991 (3 missing values). The dependent DCS variable is one for IPO dual class firms.

Z-statistics based on Huber/White/ sandwich estimator of variance. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively.

Variable	Model 1 (Management Board Compensation)		Model 2 (Supervisory Board Compensation)		Model 3 (Non-pecun. Private Benefits)		Model 4 (Complete Model)	
	Coefficient	z-value	Coefficient	z-value	Coefficient	z-value	Coefficient	z-value
Private Benefits Variables								
Total Board Compensation	2.97e-07*	1.69					2.98e-07*	1.72
Interaction Dummy 1	1.16e-07	0.82					9.92e-08	0.71
Supervisory Board Compensation			1.33e-08	0.01				
Interaction Dummy 2			6.11e-07	0.25				
Population	-5.76e-07**	-2.16	-3.77e-07*	-1.65	-4.05e-07*	-1.72	-6.93e-07**	-2.18
Name					0.2044	0.78	0.2379	0.81
Monarchy	0.3631	1.31	0.3324	1.21	0.3771	1.40	0.3679	1.29
Luxury brand (dummy)					1.2699**	2.05	1.2731*	1.92
Control Variables								
Age	-0.0077**	-2.10	-0.0073*	-1.80	-0.0052	-1.31	-0.0068*	-1.84
Risk	0.5547	0.14	1.5141	0.41			0.4203	0.10
Equity financing	-0.0153	-0.23	-0.0248	-0.50			-0.0056	-0.09
Profitability	-0.0614	-0.03	0.9744	0.46			-0.7736	-0.30
Growth	0.0409	0.65	0.0367	0.59			0.0339	0.54
Assets	-0.0708	-0.41	0.1222	0.75			-0.0995	-0.57
Constant	0.4153	0.21	-1.4986	-0.79	1.1592	-0.45	0.6063	0.30
Pseudo R²	10.54%		8.12%		7.48%		12.97%	
Wald Chi²	16.22*		8.30		11.58**		21.52**	

Table 7b
Seemingly Unrelated Bivariate Probit Regression Analysis of Choice of Dual-Class Equity and Subsequent Change of Control

The sample consists of 105 German family-owned firms going public between 1970 and 1991 (3 missing values). The dependent *Dual-Class Equity* variable is one for IPO dual-class firms. The dependent *Control Change* variable is equal to one if the firm is sold by the family within ten years of the IPO. Z-statistics of the Huber/White-sandwich estimator of variance are given in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% level, respectively.

	Variable	Coefficient	z-value
Dual-Class Equity Equation			
Private Benefits Variables	Management Board Compensation	3.58e-07**	2.06
	Interaction Dummy 1	1.04e-07	0.65
	Population	-8.26e-07***	-2.74
	Name	0.2355	0.86
	Monarchy	0.5391*	1.92
	Luxury Brand	1.5494***	2.80
Control Variables	Supervisory Board Seat	0.1011	0.32
	Age	-0.0062*	-1.72
	Risk	1.5322	0.50
	Equity Financing	-0.0074	-0.18
	Profitability	-0.1908	-0.08
	Growth	0.0495	0.82
	Assets	-0.1674	-1.06
Constant		1.0895	0.59
Control Change Equation			
Private Benefits Variables	Management Board Compensation	6.95e-08	0.39
	Interaction Dummy 1	8.91e-08	0.62
	Population	-5.80e-07***	-2.65
	Name	-0.1392	-0.57
	Monarchy	0.2400	0.96
	Luxury brand	0.2545	0.50
Ownership Variables	Family Vote Ownership (at the IPO)	-1.2488	-1.14
	Dual-Class Equity	-1.5236***	-7.85
Control Variables	Supervisory Board Seat	-0.0364	-0.13
	Age	-0.0054*	-1.74
	Risk	1.5021	0.43
	Equity Financing	0.0124	0.49
	Profitability	-2.1935	-1.03
	Growth	0.0244	0.40
	Assets	0.1299	0.83
Constant		0.2518	0.12
Wald chi^2		75.55***	

Table 8
Long-Run Stock and Operating Performance in the First 36 Months after the IPO

The sample consists of 105 initial public offerings of family-owned firms with supermajority shareholdings floated between 1970 and 1991 on a German stock exchange. α is the percent of voting rights owned by the largest shareholder. ***,**,* indicate significance at the 1%, 5%, and 10% level, respectively.

Benchmark	All IPOs	Ordinary shares	Dual-class equity	Dual-class equity, α ³ 75%
Size stock portfolio	-8.1%	0.2%	-19.6%	-22.3%
t-statistic	1.28	0.02	-2.64**	-2.75***
Bootstrapped skewness-adjusted t-statistics	-1.19	0.05	-2.61*	-2.66*
Non-voting stock portfolio (α <75%)	-9.3%	0.3%	-23.1%	-26.1%
t-statistic	-1.54	0.03	-3.09***	-3.36***
Bootstrapped skewness-adjusted t-statistics	-1.42	0.01	-2.94*	-3.15**
Size-matched operating Performance	-2.7%	-2.0%	-3.7%	-4.1%
t-statistic	-2.63***	-1.40	-2.56**	-2.35**
skewness-adjusted t-statistics	-2.91***	-1.50	-3.17***	-2.85***
z-statistics Wilcoxon signed-rank test	-3.42***	-1.92*	-3.02***	-2.45**
Sample size	105	61	44	37

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