

When do German firms change their dividends?

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Abstract

Dividends of German firms are often perceived to be more flexible than those of Anglo-American firms. We analyse the decision to change the dividend for 221 German firms over 1984–1993. Consistent with Lintner [Am. Econ. Rev. 46 (1956) 97], net earnings are key determinants of dividend changes. However, our findings also refine those of Lintner [Am. Econ. Rev. 46 (1956) 97] and Miller and Modigliani [J. Bus. 34 (1961) 411]. First, the occurrence of a loss is a key determinant of dividends in addition to the traditional key determinant, the level of net earnings. Second, the majority of dividend cuts or omissions are temporary. This stands in marked contrast with DeAngelo et al. [J. Finance 47 (1992) 1837] who report that US firms are more likely to reduce their dividend when earnings deteriorate on a permanent basis. Finally, we find that firms with a bank as their major shareholder are more willing to omit their dividend than firms controlled by other shareholders.

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1. Introduction

Company directors of UK firms frequently complain that they have little flexibility in terms of their dividend policy. The recent case of BT plc is a good illustration of this

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anecdotal inflexibility. According to the *Guardian* of 18 May 2001 (p.31), “[...]. British Telecom got in a mess and required a rescue financing. The City was appalled at the scrapping of the dividend. There were some who argued that it should have maintained a payout so as to protect its longer term investment grade status ...”. Already in 1994, the then Financial Secretary to the Treasury, Stephen Dorrell, argued that ‘dividend payouts [in the UK], which have risen substantially since 1979, may have become too high and inflexible’.³ It is then surprising that in Germany, where anecdotal evidence suggests that dividend policy is much more flexible (see e.g. *The Economist*, 29/1/1994), some of the largest companies have been gradually adopting Anglo-American dividend policies. For example, Daimler-Benz (now DaimlerChrysler) announced in the mid 1990s that it was “considering changing its dividend policy to come into line with what the group’s finance director [Gerhard Liener] described as ‘Anglo-American’ practice ... In the long term, Daimler-Benz was considering making sure that its dividend was more closely related to the group’s earnings”.⁴

The first question we address in this paper is whether such anecdotal evidence is well-founded and whether German dividend policy is more flexible. One reason why dividend policy may be more flexible in Germany than in Anglo-American countries is that it is embedded in a different corporate governance system. One of the main features of the German system is that the role of the stock market in the provision of financing is less pronounced ([Barca and Becht, 2001](#)). Hence, the pressure to maintain high dividends even in the wake of bad performance may be less (or may not exist) in Germany.

Second, we analyse whether there is a higher downward flexibility of German dividend policy. It may very well be the case that, given the less important role of the stock market, firms have more flexibility to reduce their dividend if they suffer losses after periods of good performance. Third, we also look at the other side of the coin and determine how long it takes for firms to increase or re-initiate their dividend after a cut or omission. The dividend-rigidity literature has its roots in [Lintner’s survey \(1956\)](#) and the reluctance to change the dividend was corroborated by the [Fama and Babiak \(1968\)](#) study. More recently, [DeAngelo and DeAngelo \(1990\)](#) and [DeAngelo et al. \(1992, 1996\)](#) have documented managerial aversion to cut and omit dividends for US companies. For example, the latter study shows that 51% of loss-incurring firms reduce their dividend, against only 1% of the firms without a loss. They conclude that a loss is a necessary condition, but not a sufficient condition, for a dividend reduction. [Marsh \(1992\)](#) documents a similar reluctance for the case of UK firms. This is confirmed by [Edwards and Mayer \(1986\)](#) who conduct a survey of the ‘Hundred Group’, an association of the largest UK companies with offices in London. They find that managers reduce their dividend only when they are facing a persistent decline in earnings.

Another feature of the German system of corporate governance is the high concentration of control. [Becht and Boehmer \(2001\)](#) report that most German firms have a large shareholder. Furthermore, large shareholders hold at least 50% of the

³ Financial Times of 29 April 1994.

⁴ Financial Times of 8 July 1994.

board seats on the supervisory board and are assumed to monitor the management. This leads us to the fourth issue addressed by this paper. Does the control and ownership structure have an impact on dividend policy? Although there has been a considerable amount of research on both corporate governance and dividend policy over the last few decades, theoretical models on the link between corporate governance and dividends are still sparse. Rozeff (1982), Easterbrook (1984) and Jensen (1986) develop the agency cost explanation of why companies may pay dividends. Rozeff (1982) argues that dividend payments are part of the firm's optimal monitoring/bonding package and serve to reduce agency costs. Easterbrook (1984) lists some of the mechanisms by which dividends and the consequent raising of capital can control agency costs. Agency costs "are less serious if the firm is constantly in the market for new capital. When it issues new securities, the firm's affairs will be reviewed by an investment banker or some similar intermediary acting as a monitor for the collective interest of shareholders, and by the purchasers of the new instruments"(p. 654). Finally, Jensen (1986) argues that managers with substantial free cash flow can increase dividends and thereby pay out cash that would otherwise be invested in low-return projects or wasted. In other words, higher dividends may reduce the "agency costs of free cash flow".

The study by La Porta et al. (2000) is one of the few studies to analyse explicitly the impact of corporate governance characteristics on dividend policy. Their study is on the dividend policy of 4000 large firms from 33 countries. They measure the potential for agency problems by the degree of shareholder protection in the firm's country of incorporation. They find that firms from countries with high shareholder protection pay on average higher dividends than firms from countries with low shareholder protection. This, the authors state, is evidence of the agency costs of low shareholder protection.

The following studies focus on particular types of shareholders (or control) and address the question as to whether certain types of shareholders reduce the need for dividends as a monitoring device. German banks are usually perceived to play an important role in corporate governance (see e.g. Köke, 2003; Köke and Renneboog, 2002; Becht and Boehmer, 2001; Franks and Mayer, 2001; Edwards and Fischer, 1994). The German corporate governance regime is sometimes referred to as a 'bankbased corporate governance system' as it is characterised by strong relationship-banking: a German firm usually develops a preferential relationship with a *Hausbank* (housebank) which provides most of the loan capital, and may also own a blockholding in the firm. In addition, Franks and Mayer (2001) report that banks have extensive supervisory board representation, especially in firms without non-bank blockholders (see also Edwards and Fischer, 1994, Table 9.2 for further evidence). As a result, depending on the extent of their control,⁵ banks can have a significant

⁵ Actual voting power of banks may exceed the voting power they derive from their own equity stakes if they make use of proxy voting (*Depotstimmrecht*). At a firm's annual meeting, a bank can exercise the voting rights related to a firm's shares which are deposited in the bank by the bank's clients. The bank is allowed to do so provided that it announces in advance its voting intentions to its clients and provided that these clients do not express their intention to vote otherwise.

influence on the voting outcome at the annual meeting of the shareholders, and in particular via their representation on the supervisory board. The combination of long-term external finance and monitoring has been regarded by some as the cornerstone of the merits of the German system. The central idea that emerges from this view is that bank ownership and control may reduce agency costs, and therefore reduce the need for (high and inflexible) dividends.

The institutional setting in Japan suggests a similar set of arguments. [Kester \(1986\)](#), [Prowse \(1990\)](#), [Hoshi et al. \(1990, 1991\)](#), and [Berglöf and Perotti \(1994\)](#) argue that there are close ties between Japanese management and investors, especially within the Keiretsu or industrial group, where banks own debt and equity in member firms. These close ties substantially reduce agency conflicts relative to their US counterparts. Accordingly, banks that own both debt and equity have a strong incentive to monitor firm performance closely and reduce the likelihood that management will engage in behaviour that is contrary to the objectives of the major shareholder. Likewise, [Dewenter and Warther \(1998\)](#) compare Japanese and US dividend payouts and find evidence consistent with the fact that Japanese firms belonging to a Keiretsu group experience fewer agency conflicts. These firms are less reluctant to omit and cut dividends, and their dividend policy is more responsive to earnings changes.

We also investigate the impact of other types of blockholders on the dividend policy of German firms. Government-controlled firms are expected to suffer most from agency problems as they are ultimately owned by the citizens. As most citizens are only indirect shareholders of government-controlled firms, they have few incentives to monitor the management. Hence, the managers of government-controlled firms will prefer a stable dividend policy with high dividends to keep their principals happy (and, maybe, to safeguard managerial private benefits). In firms controlled by families or other corporations, dividends should be less important and should therefore be more volatile. The reason is that in such firms, the agency costs are expected to be lower due to close monitoring by the controlling shareholder. Hence, dividends are not expected to play an important role as a monitoring device and are expected to move more closely with earnings or cash flows.

[Gugler \(2003\)](#) investigates the potential impact of a range of different types of shareholders on dividends for a sample of Austrian firms which have similar control structures as German firms.⁶ He finds that state-controlled firms have the highest dividend payout and practise dividend smoothing, whereas family-controlled firms have lower ratios and do not smooth their dividends. The dividend policy of bank- and foreign-controlled firms is somewhere in between.

The remainder of the paper is organised as follows. Section 2 describes the sample. In Section 3, we then address the question on the flexibility of German dividend policy. Sections 4 and 5 are devoted to the downward and upward flexibility of German dividend policy. In Section 6, we study the role of corporate control for the dividend decision. Section 7 concludes.

⁶ Gugler's sample consists of 214 firms of which only 42 are quoted on a stock market.

2. Methodology, sample and data description

2.1. Methodology

We use a discrete-choice model to address the following issues. First, we test whether bottom line earnings and changes in earnings are the key determinants of dividend reductions and dividend increases. Although [Lintner \(1956\)](#) argues that earnings should determine dividend changes, his sample consists mainly of large, profitable US firms which have a high propensity for dividend increases. [DeAngelo et al. \(1992\)](#) examine whether bottom line earnings also explain dividend decreases. Second, we analyse at what point in time German firms omit their dividends as opposed to just reduce them. For example, [DeAngelo and DeAngelo \(1990\)](#) argue that managers avoid dividend omissions at all costs and prefer to reduce dividends now in order to avoid future dividend omissions. We determine the degree of flexibility of the dividend policy of German firms, and the importance of current changes in profitability rather than permanent shocks for the setting of the dividend. Finally, in Section 6, we investigate the impact of large shareholders on the dividend decision.

The decision to reduce, maintain or increase the dividend is clearly an ordinal variable. A simple multinomial logit or probit model would fail to account for the ordinal nature of the variable. Likewise, the use of OLS is also not recommended as such a regression would treat the difference between decreasing and maintaining the dividend in the same way as the one between maintaining and increasing the dividend. To account for the ordinal nature of the dependent variable, we use an ordered probit as developed by [McElvey and Zaviona \(1975\)](#). The model is built around a latent regression in the same manner as the binomial probit model.⁷ The underlying model is:

$$y^* = \beta' X + \varepsilon$$

where y^* is an unobserved variable, X is a set of explanatory variables, and ε is the residual. The decision to decrease takes the value 0, maintain takes the value 1 and increase takes the value 2. Although y^* is not observed, we observe y :

$$y = 0 \quad \text{if } y^* \leq 0,$$

$$y = 1 \quad \text{if } 0 < y^* \leq \mu$$

$$y = 2 \quad \text{if } \mu < y^*$$

μ is an unknown parameter to be estimated with β . Assume that ε is normally distributed across observations (as in the binomial probit model) and the mean and the

⁷ See [Maddala \(1983, pp. 46–49\)](#) for a more detailed account of this technique.

variance of ε are set to 0 and 1, respectively.⁸ With the normal distribution we have the following probabilities:

$$P(y = 0) = \Phi(-\beta' X)$$

$$P(y = 1) = \Phi(\mu - \beta' X) - \Phi(-\beta' X)$$

$$P(y = 2) = 1 - \Phi(\mu - \beta' X)$$

where Φ is the cumulative standard normal. The coefficients are estimated by using the maximum likelihood function. We tested the null hypothesis of homoskedasticity using a Lagrange Multiplier test (Davidson and MacKinnon, 1984). As there was not enough evidence to reject the null hypothesis of homoskedasticity, all models were estimated assuming multiplicative heteroskedasticity (i.e. $\text{var}[\varepsilon_i] = [\exp(\gamma' z_i^*)]^2$, essentially adding an additional parameter vector to the model).

2.2. Sample and data description

Our sample is a panel of data ranging from 1984 to 1993. The sample consists of 221 quoted German industrial and commercial firms listed on the eight German stock exchanges for the period 1984–1993. The reason why we chose this particular 10-year data panel is that the first half of this period is characterised by an economic boom period, which is followed by an economic recession. Hence, it is likely that firms will be under pressure to revise their dividend policy during this period. The sample is highly representative of the population of listed German firms, as it contains more than half the listed German companies and represents more than 80% of the market capitalisation of commercial and industrial firms. The sample includes all the German companies that were quoted on at least one of the German stock markets and that have at least 5 years of accounting data over the 10 years ranging from 1984 to 1993.

We excluded firms with ‘control agreements’ in place over the entire period 1984–1993 from the sample. Control agreements are between a company and its parent company and are either Profit and Loss Agreements (PLA, *Gewinnabführungsvertrag*) or a Subordination of Management Agreement (SMA, *Beherrschungsvertrag*). For the latter contract, the controlling company is required to absorb all the losses, but the transfer of profits is optional. In the case of the former contract, both profits and losses are always transferred to the parent company. The reason for excluding such firms is that their accounting information tends to be limited. Frequently, the profit is not disclosed and reporting is limited to the amount transferred to the parent company (*Gewinnabführung*) as well as the dividends paid to the minority shareholders. All in all, there are 2098 firm-year observations: the panel counts 10 years of observations for 174 firms, 9 for 13 firms, 8 for 15 firms, 7 for 8 firms, 6 for 9 firms and 5 for 2 firms.⁹

We collect all the accounting items from the *Hoppenstedt Saling Aktienführer*. This guide is updated annually and contains information about all the listed German firms such

⁸ As Greene (2003, p. 737) puts it, the model can also be estimated with a logistically distributed disturbance. In practice, this re-formulation makes virtually no difference.

⁹ Thirty-six of the sample firms were introduced to the stock exchange after 1984.

as balance sheet and profit and loss items, and the percentages of the votes controlled by the blockholders. Dividends per share (D_{t-1}) are calculated as the weighted average of dividends on ordinary shares and on preference shares (if outstanding). The weights are based on the relative market capitalization of both types of shares. Forty-four of the 221 firms in the sample had preference shares outstanding in at least 1 year of our sample period. It should be noted that in 37 of these 44 cases dividends on German preference shares usually change along with those on the ordinary shares.

Special dividends on ordinary shares are also included in the dividend per share. There were 191 such special dividend payments for the total 2098 firm-year observations (i.e. 9% of the sample). A simple inspection of the dividend per share series reveals that in an overwhelming majority of the cases these special dividends frequently reflect shifts in dividend policy rather than just transitory increases in dividends and earnings. Brickley (1983) studies the dividend payouts and earnings of a sample of US firms in the year following the announcement of special dividends and finds results supporting this view. However, in 10 cases we observed large one-off payments (*Sonderausschüttung*) either associated with ‘special anniversaries’, or sales of subsidiaries (in one case), or distributions of reserves previously accumulated at a different rate of taxation. Similarly to the methodology in Behm and Zimmermann (1993), we excluded these 10 firm-year observations.

German financial reporting tends to be more conservative than Anglo-American financial reporting (see Harris et al. (1994) for an overview of the system). In particular, there are three factors that contribute to a conservative bias in the published profit figure. First, there is some degree of prudence in asset valuation. According to the imparity principle (*Imparitätsprinzip*) unrealised losses need to be reported but not unrealised gains.

Second, the regulation of the profit distribution, which is referred to in paragraph 150 of the German Stock Corporation Act (AktG §150) establishes a link between dividends and earnings. This provision requires companies to build up a legal reserve (*gesetzliche Rücklage*) from their profits in the balance sheet. The annual profit, after the transfer to the legal profit reserve, is then the basis for dividend distribution. The provisions of AktG §58 specify that the management board (*Vorstand*) and the supervisory board (*Aufsichtsrat*) can retain no more than half of the annual profits, unless they get the approval of the shareholders for a lower distribution. In other words, this provision requires companies to pay out at least 50% of their current profits as dividends. However, that is not the case for all companies, as other requirements such as legal reserves and special provisions in the articles of association of companies mitigate the impact of AktG §58 such that the management board may be authorised to transfer up to 100% of the year’s profit to profit reserves. As a consequence of the link established by the AktG §58 between dividends and earnings, it is in the interest of managers not to report earnings that attain a desired dividend policy because higher reported earnings may create shareholder pressure for higher dividends.

Third, the existence of pension provisions may also account for a certain downward bias in the published profit figure. In the light of this conservative reporting, and other German company law specificities, we use an alternative measure of corporate profitability throughout this paper. Our profit measure, net income (NI_t), is measured by zero distribution profits which adjust for the fact that the German tax system affects both

measured profits and dividend payouts (Mayer and Alexander, 1990). Given that dividends are taxed at a different rate than earnings retentions, corporate tax liabilities are sensitive to dividend payouts. In particular, in Germany, dividends are taxed at a lower rate than retentions. Therefore, we measure profits as zero distribution profits:

$$\frac{D(1 - t_c)}{1 - t_d} + R$$

where t_d is the tax rate on dividends, t_c is the tax rate on retained profits, D are the dividends net of tax, $D/(1 - t_d)$ are the gross dividends and R are the recorded retentions

Table 1

Sample descriptive statistics on dividend payouts and changes

Panel A: Dividends, published profits, cash flows and variability of dividends				
	Dividends per share	Published profit per share	Cashflow per share	
Mean (DM)	12.3	14.3	57.6	
(Median, standard deviation)	(12.5, 9.2)	(12.1, 15.3)	(46.4, 54.6)	
Panel B: Distribution of changes in dividends				
Range of % change in div.	Increases (excluding div. initiations), % of increases	Cuts (excluding div. omissions), % of cuts		
[0%; 10%]	30.2	14.5		
]10%; 25%]	44.9	38.0		
]25%; 50%]	13.5	34.5		
]50%; 75%]	5.3	9.0		
]75%; 90%]	1.3	4.0		
]90%; 100%]	4.9			
Panel C: Percentage of firm-year observations with maintained, increased and reduced dividends				
Year	Number of firms	Firms that maintained dividends (%)	Firms that increased dividends (%)	Firms that reduced dividends (%)
1985	182	49.5	37.4	13.2
1986	192	54.2	31.3	14.6
1987	206	57.3	29.1	13.6
1988	216	55.1	36.1	8.8
1989	220	46.8	41.4	11.8
1990	219	45.2	38.8	16.0
1991	219	40.2	36.1	23.7
1992	214	50.9	19.6	29.4
1993	196	37.8	36.2	26.0

The sample period is 1984–1993; the sample consists of 221 German industrial and commercial quoted firms and there is a total of 1877 firm-year observations. Dividends are gross dividends per share. Cash flows are defined as zero distribution profits gross of depreciation and changes in provisions.

given a dividend distribution of D . To illustrate how dividends in Germany affect the corporate tax liabilities, assume that a firm suffers a loss. If it omits its dividend, then there will be no tax liability (as t_c will be 0). However, if it decides to pay out a dividend despite its loss, then there will be a tax liability (amounting to t_d times the dividend distribution).

We use cash flows as an alternative profit measure to adjust for the conservatism of German accounting practices (see above). Cash flows (CF_t) are defined as zero distribution profits gross of depreciation and changes in provisions. Changes in provisions are the changes in pension provisions (*Pensionsrückstellungen*) and other provisions (*Sonstige Rückstellungen*).¹⁰

The net income, cash flow, and changes in net income and cash flows are standardised by the book value of equity of the previous period. In the models described below, we also include a dummy variable that takes the value of one if there is a loss in period t ($NI_{loss,t}$ or $CF_{loss,t}$).

Behm and Zimmermann (1993) and Amihud and Murgia (1997) use the net profit figure as calculated by the German Association of Financial Analysts (*Deutsche Vereinigung für Finanzanalyse und Anlageberatung*, DVFA) as a measure of profitability. There are three reasons why we cannot use this measure. First, the DVFA profit measure is only available for the major German firms.¹¹ Second, negative DVFA figures are not reported. Behm and Zimmermann (1993), for instance, resort to using the published profits for firms with unreported, negative DVFA profits. Third, similar to net income, the DVFA net profit is smoothed by adjusting for extraordinary items. More specifically, the DVFA subtracts extraordinary income from the published profit and adds back extraordinary expenses. Hence, the DVFA figure fails to take into account the transitory shocks that may influence dividend policy. Therefore, we use cash flows unadjusted for extraordinary items as an alternative to net income.

Table 1 summarises the statistics on the dividend payouts and the frequency of dividend changes over the period 1985–1993. Panel A shows that the mean dividend per share, the published profit per share and cash flow per share amount to DM12.3, 14.3 and 57.6, respectively. The payout on a published profit basis is significantly higher than the equivalent ratio on a cash-flow basis, 86% ($= 12.3/14.3$) and 21% ($= 12.3/57.6$), respectively. Behm and Zimmermann (1993) find similar figures for a sample of 32 major quoted German firms. They report mean net dividends per share of DM7.31, i.e. DM11.4 on a gross basis, which is slightly lower than our figure of DM12.3. The mean published profit per share is also found to be slightly lower than ours, DM12.5 and DM14.3,

¹⁰ The inclusion of pension provisions in the calculation of the cash flow deserves a comment, as in the UK this item does not apply. One could argue that pension provisions should be regarded as a liability (from the company towards the employees) and therefore it should not be treated as retentions. However, in our view, there is a strong case for the inclusion of changes in pension provisions in the cash flow. Edwards and Fischer (1994, Table 3.4, p. 66) report that, for the period of 1970 to 1989, pension provisions accounted for around 6% of the internally generated funds for non-financial companies. The authors also argue that firms frequently have a high degree of discretion over the way in which pension provisions are invested. This is one reason why the bottom line profit figure may be so conservative in Germany. Because of this argument, we included this item in the cash flow figure. The item ‘other provisions’ is net of tax provisions such as deferred taxation.

¹¹ Behm and Zimmermann’s (1993) sample comprises 32 major firms, whereas Amihud and Murgia’s (1997) sample includes the 200 most actively traded German firms.

respectively. Panel B shows the size of dividend changes: almost three quarters of the dividend cuts are between 10% and 50%, whereas most dividend increases are more modest with 75% of the increases being smaller than 25%. Panel C of Table 1 reveals that between 38% and 55% of the firms maintain their dividends at the same level (this includes firms maintaining a zero dividend payout) during individual years of the period 1985–1993. Panel C also reports that between a fifth and a third of the firms reduce their dividends, whereas the percentage of firms with dividend reductions ranges from 13% in 1985 to 29% in 1992. The average dividend increase amounts to 31% compared to –35.5% for the average dividend decrease [not reported in the table].

We also collect data on corporate control (i.e. ownership of voting equity) from the *Hoppenstedt Saling Aktienführer*. The types of shareholders we distinguish are: families, other German firms, the German state, banks, insurers, foreign firms or institutions, holding companies, charitable foundations and unknown shareholders. As complex control structures (so-called pyramids) are frequent in German firms (Becht and Boehmer, 2001), we report both first-tier control and ultimate control. The identification of the ultimate controlling shareholder for each firm follows from the application of the following control rules based on German corporate law (Renneboog, 2000; Köke, 2003). Rule 1a (strong control rule): Control is held at the next (or a higher) tier of the pyramid if the first-tier shareholder is controlled by a shareholder on the next tier holding at least 50% of the voting rights. Rule 1b (stop rule): If rule 1a does not apply, i.e. there is no shareholder with 50% or more at the next tier, then the chain of control ends and the shareholder at the current tier is the ‘ultimate’ shareholder. We also use a less strict, alternative control criterion. Rule 2a (weak control rule): Control is held at the next (or a higher) tier of the pyramid if the first-tier shareholder is controlled by a shareholder on the next tier holding at least 25% of the voting rights, while at the same time all other shareholders on that tier hold less than 25%. According to rule 2b (stop rule), the control chain ends if no shareholder with at least 25% of the control rights can be identified at the next tier.

The choice of the 50% rule is fairly obvious as control over 50% of the voting rights yields majority control which is sufficient to dismiss management (after its regular period in office).¹² The 25% benchmark is also important as it constitutes a blocking minority which provides a veto on decisions by the management (or the major blockholder).¹³ e.g. the decision to change the articles of incorporation about the issue of different types of equity or to reduce the share capital, the decision to make a binding tender offer to minority shareholders below market value (Boehmer, 2002). The existence of a blocking minority also averts a supermajority of 75%, which enables the dismissal of management during its period of office.

Thus, a firm is widely held at the first tier, if it does not have a shareholder at the first tier owning more than 50% or 25% of its voting equity, respectively. A firm has an ultimate controlling shareholder at the first tier if that shareholder is either widely held (i.e. a widely held firm, bank or insurer), or a shareholder of the following types: the German

¹² See AktG §103 (1) of the German Corporation Law.

¹³ The importance of the thresholds related to blocking minority, majority and supermajority is also shown by Becht and Mayer (2001): the share stakes of large blockholders are clustered just above the 25%, 50% and 75% thresholds.

Table 2

Control structure of 221 German industrial and commercial quoted firms in 1984, 1989 and 1993

	First-tier control				Ultimate control			
	≥ 25%		≥ 50%		≥ 25%		≥ 50%	
	%	NR	%	NR	%	NR	%	NR
<i>Panel A: 1984</i>								
(A) Widely held	15.4	28	45.6	83	15.9	29	46.2	84
(B) Closely held, the largest shareholder being:								
(1) Family	25.8	47	19.8	36	33.0	60	24.7	45
(2) Indust./Com. Firm	25.8	47	18.7	34	11.0	20	8.2	15
(3) State	4.4	8	3.3	6	7.7	14	5.5	10
(4) Bank	12.1	22	2.7	5	15.9	29	5.5	10
(5) Insurer	0.5	1	0	0	1.1	2	0	0
(6) Foreign firm/inst.	6.0	11	4.9	9	8.2	15	7.1	13
(7) Holding	9.3	17	4.4	8	0	0	0	0
(8) Foundation	0.5	1	0.5	1	1.6	3	1.1	2
(9) Unknown	0	0	0	0	5.5	10	1.6	3
Total	100	182	100	182	100	182	100	182
<i>Panel B: 1989</i>								
(A) Widely held	15.8	35	41.2	91	16.3	36	41.6	92
(B) Closely held, the largest shareholder being:								
(1) Family	26.7	59	22.6	50	36.2	80	29.4	65
(2) Indust./com. firm	27.6	61	19.5	43	10.0	22	7.2	16
(3) State	3.6	8	3.2	7	6.3	14	5.0	11
(4) Bank	8.6	19	2.7	6	12.2	27	5.0	11
(5) Insurer	0.5	1	0	0	0.5	1	0	0
(6) Foreign firm/inst.	6.3	14	4.1	9	9.5	21	7.2	16
(7) Holding	9.5	21	5.4	12	0.9	2	0	0
(8) Foundation	1.4	3	1.4	3	2.7	6	1.8	4
(9) Unknown	0	0	0	0	5.4	12	2.7	6
Total	100	221	100	221	100	221	100	221
<i>Panel C: 1993</i>								
(A) Widely held	14.9	31	39.4	82	15.9	33	39.9	83
(B) Closely held, the largest shareholder being:								
(1) Family	22.1	46	16.3	34	32.7	68	25.0	52
(2) Indust./com. firm	33.7	70	26.4	55	12.0	25	9.6	20
(3) State	4.3	9	3.4	7	8.7	18	6.3	13
(4) Bank	7.7	16	2.4	5	10.1	21	3.8	8
(5) Insurer	1.9	4	0	0	1.9	4	0	0
(6) Foreign firm/inst.	5.3	11	5.3	11	10.6	22	10.6	22
(7) Holding	9.1	19	5.8	12	0.5	1	0.5	1
(8) Foundation	1.0	2	1.0	2	1.9	4	1.4	3
(9) Unknown	0	0	0	0	5.8	12	2.9	6
Total	100	208	100	208	100	208	100	208

Widely held firms are firms that do not have any shareholder holding at least 25% or 50% of the voting shares. The sample size varies over the 10-year period as some firms in our sample are not quoted during the whole period and some went private or bankrupt.

State, a foreign firm or institution, or an individual or a family. Otherwise, the ultimate shareholder is at a higher tier.

Table 2 documents the control structure for our sample for the starting year, the middle year and the last year of the sample period (1984, 1989 and 1993, respectively). At the first tier, less than 16% of the firms are widely held as they do not have a shareholder controlling at least 25% of the voting equity. Families and other German firms are the most important types of shareholders (panels A–C). Each of these categories of shareholders is the major shareholder in about a quarter of the firms. At the ultimate level, the percentage of voting rights controlled by families rises at the expense of industrial firms. Except for a decline in the importance of banks, the table shows that over the period 1984–1993 control has hardly changed. Goergen (1998) documents a similar decline in the importance of German banks as equity holders in initial public offerings.

3. The flexibility of dividend policy

This section answers the question as to whether the decision to increase, maintain or reduce dividends depends on past earnings and/or cash flows. Table 3 contains the results of the ordered probit model. The dependent variable is zero, if the dividend is cut, 1 if it is maintained and 2 if it increases. We estimate several specifications of the model. Each specification includes at least some of the following explanatory variables: a lagged dependent variable (dD_{t-1}), the current level of net income (NI_t) or cash flow (CF_t), the level of past net income (NI_{t-1}) or cash flow (CF_{t-1}) and the change in net income from period $t-1$ to t (ΔNI_t) or cash flow (ΔCF_t). The lagged dependent variable indicates whether there was a decreased dividend, an unchanged dividend or an increased dividend in period $t-2$ to $t-1$. The latter three variables are standardised by the book value of equity of the previous period. Finally, we test the significance of a dummy variable that takes the value of one if there is a loss in period t (NI_{loss_t} or CF_{loss_t}). Panel A and panel B report the results with earnings and cash flow as the performance measure, respectively.

In each of the specifications (a) to (e), the past dividend has a positive and statistically significant effect on the likelihood that the current dividend is changed. Panels A and B show that there is a high probability for dividends to increase in the current year if dividends increased over the preceding financial year. The probability of a dividend increase is higher when there are positive earnings in the current year (specifications (a), (b), (c) and (e)). The same relationship holds for the equivalent specifications with cash flows (panel B). Provided that net earnings or cash flows are positive over the current year, dividends are more likely to increase if the net earnings or cash flows of the preceding year were negative (specification (b)). Alternative specifications were estimated including further lags of net income or cash flow, but these further lags were neither individually nor jointly statistically significant.

From the inclusion of an earnings loss dummy/negative cash flow dummy (specifications (c) of panels A and B), we learn that firms reporting an annual loss are significantly more likely to reduce their dividend. This result is consistent with DeAngelo et al. (1992).

Table 3

Ordered probit analysis of decision to decrease, maintain or increase dividends

Panel A: Dividend choice model with earnings

	(a)	(b)	(c)	(d)	(e)
Constant	0.915*** (0.068)	0.942*** (0.074)	1.167*** (0.079)	1.209*** (0.082)	0.938*** (0.075)
dD_{t-1}	0.087* (0.049)	0.128*** (0.048)	0.093* (0.049)	0.096** (0.048)	0.137*** (0.049)
NI_t	0.723*** (0.059)	0.968*** (0.064)	0.402*** (0.074)	—	0.360*** (0.080)
NI_{t-1}	—	−0.554*** (0.083)	—	—	—
ΔNI_t	—	—	—	0.659*** (0.073)	0.628*** (0.094)
$NI_{loss,t}$	—	—	−0.844*** (0.142)	−0.891*** (0.134)	—
Log-likelihood	−1618.7	−1597.5	−1577.1	−1572.8	−1594.8
Pseudo R^2	4.7%	6.0%	7.2%	7.4%	6.1%
R_p^2	50.6%	50.4%	51%	51.9%	50.6%

Panel B: Dividend choice model with cash flows

Constant	0.729** (0.071)	0.871*** (0.078)	0.853*** (0.078)	0.927*** (0.073)	0.891*** (0.080)
dD_{t-1}	0.194*** (0.047)	0.183*** (0.046)	0.173*** (0.048)	0.178*** (0.047)	0.188*** (0.048)
CF_t	0.175*** (0.034)	0.551*** (0.047)	0.113*** (0.037)	—	0.011*** (0.039)
CF_{t-1}	—	−0.499*** (0.051)	—	—	—
ΔCF_t	—	—	—	0.580*** (0.052)	0.613*** (0.062)
$CF_{loss,t}$	—	—	−0.645*** (0.215)	−0.270 (0.199)	—
Log-likelihood	−1667.6	−1632.1	−1660.3	−1623.7	−1625
Pseudo R^2	1.90%	3.90%	2.30%	4.40%	4.40%
R_p^2	49.20%	49.60%	48.50%	50.20%	49.90%

The dependent variable equals 0 if the dividend is cut, 1 if maintained and 2 if increased. The sample consists of 221 industrial and commercial firms and data cover the period 1984–1993. The sample size is 1655 firm-year observations in all regressions. Net income, cash flow and the change in net income and in cash flow are standardised by the book value of equity of the preceding year. All models are estimated with a correction for multiplicative heteroskedasticity. All model specifications are significant with p -values < 0.001. Pseudo R^2 follows McFadden (1974). R_p^2 stands for the percentage of correct predictions. Standard errors are between parentheses. ***, **, * stand for statistical significance at the 1%, 5% and 10% level, respectively, for the two-tailed test.

Finally, specifications (d) and (e) show that not just earnings levels are important, but also the earnings dynamics. Rising net earnings or cash flows also lead to dividend increases.

When comparing panels A and B, it seems that our cash flow measure is a weaker predictor (as suggested by the lower pseudo R^2) of a shift in the dividend policy than net income. However, Gujarati (2002, p.606) states that: “It should be noted [...] that in

binary regressand models, goodness of fit is of secondary importance. What matters is the expected signs of the coefficients and their statistical and/or practical significance.”¹⁴ Panels A and B reveal that both the coefficients on net income and cash flow are significant at the same level (1%).

In general, the above findings corroborate Lintner’s (1956) results that current earnings are key determinants of the dividend decision. However, our results also constitute a refinement to Lintner’s findings, as they suggest that earnings losses have substantial predictive power over and above current net income and changes in current net income.

Still, our results may be subject to some criticism. According to Miller and Modigliani (1961), a shift in the dividend policy of a firm with a long track record of dividend payments and appreciation in its dividends is likely to be interpreted as a shift in managers’ expectations about the future value of the firm. In other words, if managers have adopted a stable dividend policy and decide to shift it, this shift is likely to be interpreted as carrying more information than a shift by managers of a firm with less stable past dividends. As in the above analysis, we have included both types of firms, this may have had an effect on the estimation results.

4. Downward flexibility of dividend policy

As mentioned above, we have chosen the period 1984–1993 as our sample period, as this period can be divided into two sub-periods, the first one reflecting a favourable economic climate (1984–1988) and the second one capturing a recession (1989–1993). To test the flexibility of dividends, we only retain those firms with strictly positive earnings and dividends over the first sub-period (1984–1988). This leaves us with 189 firms out of 221. We then partition the sample of 189 firms into two sub-samples. The first consists of the 71 firms with at least one annual loss during the second sub-period (1989–1993). The second sub-sample consists of the 118 firms, which continue to generate strictly positive earnings and dividends during 1989–1993. So, both types of firms have a similar, stable dividend policy in the first period, but one sub-sample remains profitable in the second sub-period, whereas the other incurs losses.

Table 4 reports the frequency of dividend cuts, omissions, increases and dividends maintained by the sub-sample of loss-incurring firms and that of profit-making firms. For the loss-incurring firms, we report what happens to the dividend in the year of the *first* annual loss.¹⁵ For the firms without losses, the table records what happens to the dividend during each of the 5 years of 1989–1993. This gives us 568 firm-year observations. The vast majority of loss-incurring firms (57 firms or 80%) omit their dividend in the first year that they suffer a loss. Eight loss-incurring firms (or 11%) cut their dividend. The total

¹⁴ A model, containing current net earnings, lagged net earnings as well as current cash flow, was also estimated. In line with the previous results, the coefficients on the cash flow variables were no longer statistically significant.

¹⁵ We do not record the dividend behaviour of the loss-incurring firms for the years after the first loss because we want to focus on the impact of the current loss on the current dividend payout rather than on its impact on the long-term payout.

Table 4

Dividend changes for 71 loss-incurring firms and 118 firms with strictly positive earnings through 1989–1993

	Number of firm-years	Number (percentage) of cases with dividend			
		Cuts	Omissions	Increases	Maintained
Loss-incurring firms	71	8 (11.3%)	57 (80.3%)	1 (1.4%)	5 (7%)
Firms without losses	568	77 (13.6%)	4 (0.7%)	244 (43%)	243 (42.8%)

Both sub-samples of loss-incurring and profitable firms had similar stable dividend policies and strictly positive earnings during the period 1984–1988. Dividend cuts are defined as reductions in dividends, whereas omissions stand for 100% reductions in the dividend. For the loss-incurring sub-sample, we show the number of dividend cuts, omissions, increases and unchanged dividends in the year of the first earnings loss. For the firms without losses, we give the frequency of dividend cuts, omissions, increases and unchanged in the total number of firm-year observations from 1989 to 1993.

percentage of the firms cutting or omitting dividends amounts to 92%. This stands in marked contrast with profitable firms of which only 14% cut or omit their dividend (0.7% omit their dividend and 13.6% reduce their dividend). Hence, an annual loss (irrespective of its level) is a key determinant of the decision to omit the dividend. Given that we correct for past dividend policy and earnings, these findings are not influenced by cumulative, past poor performance.

These results stand in stark contrast with those obtained by US studies. DeAngelo et al. (1992), for instance, report significantly different results for 167 loss-incurring NYSE firms and 440 profit-making NYSE firms. Only 15% of their loss-incurring firms omit their dividend. The majority of loss-incurring firms (51%) reduce their dividend. Similarly,

Table 5

Ordered probit analysis of the decision to omit, cut or maintain/increase dividends in loss and non-loss incurring firms during 1989–1993

	(a)	(b)	(c)	(d)	(e)	(f)
Constant	0.692*** (0.159)	1.175*** (0.153)	1.692*** (0.225)	1.570*** (0.255)	1.779*** (0.236)	1.686*** (0.255)
NI_t	0.390** (0.185)	–	–	0.419* (0.237)	–	0.277 (0.250)
ΔNI_t	–	1.570*** (0.210)	–	–	0.609*** (0.206)	0.619*** (0.244)
$Niloss_t$	–	–	– 2.355*** (0.251)	– 1.957*** (0.332)	– 2.118*** (0.283)	– 1.890*** (0.337)
Log-likelihood	– 163.7	– 150.7	– 116.3	– 114.8	– 113.5	– 109.1
Pseudo R^2	10.3%	17.5%	36.3%	37.1%	37.8%	40.2%
R_p^2	55.6%	62.4%	76.4%	76.4%	75.8%	76.5%

The dependent variable dD equals 0 if the dividend is omitted, 1 if the dividend is cut to a strictly positive level and 2 if the dividend is increased or maintained. The sample consists of (1) 71 firms for which the event year corresponds to the initial year they suffered losses (measured over the period 1989–1993), and (2) 107 firms for which the event year is the first year there was an earnings decline to strictly positive earnings (measured over 1989–1993). There are therefore 178 observations. Earnings and changes in earnings are standardised by the book value of equity for the previous year. All models are corrected for multiplicative heteroskedasticity. All model specifications are significant with p -values < 0.001. Pseudo R^2 follows McFadden (1974). R_p^2 stands for the percentage of correct predictions. Standard errors are between parentheses. ***, **, * stand for statistical significance at the 1%, 5% and 10% level, respectively, for the two-tailed test.

DeAngelo and DeAngelo (1990) find that for a sample of 80 NYSE firms, managers of firms with long track records of dividends are less likely to cut their dividend.

We do not only test the impact of earnings losses on dividend policy, but also investigate whether a fall in earnings triggers dividend reductions. A total of 178 firms experience a drop in earnings (including the 71 loss-incurring firms from Table 4). Using an ordered probit model, we determine the extent to which a change in dividend policy can be explained by levels and changes in net earnings. In the models of Table 5 dividend omissions are represented by the value 0, cuts to a positive level by 1 and maintained or increased dividends by 2. The independent variables are the current net earnings, changes in net earnings and a loss dummy, which is set to 1 if the current net income is negative. The level and the change in net income are again divided by the book value of equity from the previous period. The main reason for dividend reductions or omissions is earnings losses (specifications (c) to (f)). Specification (f) shows that both earnings reductions and earnings losses, but not net earnings levels, are responsible for changes in dividend policy.¹⁶

As a robustness check of the above results, we also estimate the ordered probit regressions for a slightly different sample. This sample includes the 71 firms with the event year being the first loss-incurring year as well as 118 firms with an event year capturing the first year of a net earnings or cash flow decline. This yields 221 observations, as for some firms we have two event years if the year of the decline in net earnings does not coincide with the one of the decline in cash flow. The results (not reported) are very similar to those shown in Table 5.

To summarise the results so far, there is strong evidence that for German companies the occurrence of earnings losses is a key determinant of dividend changes, in addition to the traditional key determinant which is the level of net earnings. These results are similar to those of DeAngelo et al. (1992). However, at the same time, our results are very different from what has been observed for the case of UK or US firms. In the UK or the US, earnings declines trigger dividend cuts to still positive levels of dividends rather than dividend omissions. Thus, it seems that the dividend policy of German firms is characterised by a higher downward flexibility than the one of Anglo-American firms.

Dividends will only be omitted if the managers are pessimistic about the future, long-term profitability of the firm (Modigliani and Miller, 1958, 1959). Therefore, we investigate whether or not dividend omissions are associated with a persistent decline in performance. We run a binomial probit model on the sample of 71 firms with stable past dividends and positive net earnings and cash flows over the period 1984–1988 and with losses in at least 1 year during the period 1989–1993.¹⁷ Three of the 71 firms went bankrupt 2 years after the year of the initial loss. The dependent variable takes the value of 1 if there is a dividend omission and takes 0 otherwise. The net earnings in year $t + 1$ are

¹⁶ Specification (f) has the highest goodness of fit. However, it should be noted, that the pseudo R^2 does not include a penalty for increasing the number of exogenous variables (see Aldrich and Nelson, 1984) in contrast to the adjusted R^2 for OLS regressions.

¹⁷ As 15 of these firms had their initial loss-incurring year in 1993, data on earnings and dividends were collected for 1994.

used as a proxy for the management's expectations of the future earnings with t representing the year of the first earnings loss.

The statistical significance of the specifications in Table 6 is very low. The past level of net earnings has no explanatory power on the decision to change the dividend. Only the current level of net earnings is statistically different from zero (at the 10% level). The negative sign of the net earnings in the year following the year of the initial loss suggests that in the case of dividend omissions by loss-incurring firms, future earnings will be low. However, the variable is only significantly different from zero at the 14% level. Our results are very different from those of DeAngelo et al. (1992) for the US. DeAngelo et al. find that the decision to reduce the dividend depends strongly on the net earnings before the event year, on the current net earnings and on the net earnings of the year following the event year. This suggests that dividend policy in Germany is much more flexible than in the US or the UK.

It should be noted that the inclusion of future net earnings (as in our setting and in the one of DeAngelo et al., 1992) might induce a serious endogeneity problem because the current dividend captures expectations about future earnings. If this is the case, including NI_{t+1} in the probit model will not add any additional information. There is no easy way to solve this problem, apart from including analysts' earnings forecasts. Unfortunately, this kind of information was not available for the period of study.

Table 6

Binomial probit analysis of the decision to omit dividends and the persistence and depth of net earnings difficulties around the year of losses

	(a)	(b)	(c)	(d)	(e)
Constant.	1.369*** (0.448)	1.326*** (0.404)	0.811** (0.415)	1.158*** (0.302)	0.705 (0.495)
NI_{t-2}	-0.145 (0.953)	—	—	—	—
NI_{t-1}	—	-0.377 (1.194)	—	—	-0.185 (1.181)
NI_t	—	—	-1.303* (0.791)	—	-1.073 (0.729)
NI_{t+1}	—	—	—	-0.526 (0.357)	-0.663 (0.457)
Log-likelihood	-36.6	-36.6	-34.5	-35.2	-33.7
Pseudo R^2	0.01%	0.01%	5.8%	3.9%	7.9%
R_p^2	78.9%	78.9%	78.9%	77.5%	78.9%
Significance level (%)	0.880	0.915	0.074	0.096	0.124

The dependent variable equals 1 if the dividend is omitted and 0 otherwise. The sample consists of 71 firms that experienced 5 years of strictly positive earnings and dividend payments over the period 1984–1988. The event year corresponds to the initial year in which those firms incurred losses over the period 1989–1993. Net earnings in periods $t-2$, $t-1$, t and $t+1$, where t is the year of the annual loss, are standardised by the book value of equity for the previous year. Standard errors are robust to heteroskedasticity following White (1980). Pseudo- R^2 follows McFadden (1974). R_p^2 stands for the percentage of correct predictions. Standard errors are between parentheses. ***, **, *, stand for statistical significance at the 1%, 5% and 10% level, respectively, for the two-tailed test.

To conclude, our results suggest that German firms do not hesitate to reduce their dividend in the case of a temporary deterioration of their earnings. However, unlike Healy and Palepu (1988) and DeAngelo et al. (1992), we do not find evidence that dividend omissions only occur when managers believe that the earnings deterioration will persist in the future and is not just temporary.

We also estimated the above model (results not reported) using cash flow instead of net earnings as the explanatory variable. We found that lower cash flows 2 years and 1 year before the initial loss-incurring year were associated with significantly higher odds of having a dividend omission. However, this effect disappeared when future cash flow was added to the model. At best, this suggests a weak correlation between dividend omissions and persistently bad performance.

In summary, first, earnings losses are a key factor for dividend reductions and omissions. Second, it seems that managers cut or omit dividends when earnings are depressed on a temporary basis rather than over longer time periods. In the light of these findings, it is interesting to determine the extent to which German firms revert to the dividend payout prior to the dividend reduction or omission. This issue is addressed in the next section.

5. Upward flexibility of dividend policy

If German firms are more willing to reduce their dividend in the case of a temporary earnings problem, they may also be more prone to increase their dividend in the case of a temporary earnings improvement. If this were not the case, one would observe a decrease in the payout ratio of German firms over the long run. In this section, we analyse changes in dividend policy in the aftermath of dividend reductions and omissions. In particular, we address the following questions: (1) how many years does it take a firm to increase or initiate its dividend after a dividend cut or omission, respectively, and (2) in the case of a

Table 7
Dividend rebounds after dividend omissions

Panel A: number (proportion) of firms re-initiating the dividend

1 year after t	2 years after t	3 years after t	>3 years after t
18 (28.6%)	17 (27%)	6 (9.5%)	22 (34.9%)

Panel B: average (median) gross dividend (DM) around t for firms re-initiating the dividend

	1 year after t	2 years after t	3 years after t
$t - 1$	10.5 (8.2)	9.4 (9.4)	13.6 (11.7)
t	0 (0)	0 (0)	0 (0)
$t + 1$	8.8 (8.6)	0 (0)	0 (0)
$t + 2$	—	10.2 (6.3)	0 (0)
$t + 3$	—	—	16.05 (14.85)

The sample consists of 61 firms. The event year is the first year during 1985–1991 in which firms omitted the dividend. There are 63 observations as two firms omitted the dividend twice during the period of analysis. t stands for the first year of dividend omission after at least 1 year of strictly positive payouts.

Table 8
Dividend rebounds after dividend reductions

Panel A: number (proportion) of firms increasing the dividend		
1 year after t	2 years after t	≥ 3 years after t
31 (50%)	16 (25.8%)	15 (24.2%)
Panel B: average (median) gross dividend (DM) around t for firms increasing the dividend		
	1 year after t	2 years after t
$t - 1$	17.6 (15.6)	18.0 (16.1)
t	11.1 (9.4)	11.9 (10.2)
$t + 1$	15.9 (12.1)	11.5 (9.4)
$t + 2$	—	14.0 (12.1)

The sample consists of 62 firms during 1985–1991. The event year is the initial year in which firms reduced the dividend to a still-positive level. t stands for the first year of dividend reduction after at least 1 year of strictly positive payouts.

dividend increase or initiation, what is the average dividend increase or (re)initiation relative to the payout prior to the dividend cut or omission.

In analysing the dividend behaviour surrounding dividend omissions, we first focus on the firms which omitted their dividend some time during 1985–1991 and retain only those with a 5-year data-window around the omission. The window starts with the year preceding the omission, includes event year t and ends 3 years after the omission. We obtain 63 observations consisting of 61 firms (out of 221) satisfying the above criteria; two of these firms omitted their dividend twice. By definition, all the firms in the sample paid a strictly positive dividend in year $t - 1$.

Table 7 shows what happens in the aftermath of a dividend omission. First, panel A reveals that 56% of the firms in the sample re-initiate their dividend within the 2 years after the omission, with 29% already re-initiating in the year immediately after the omission. Second, panel B shows that during the 2 years after the omission the majority of firms revert to the dividend-payout level in place before the omission. The average gross dividend for the firms that re-initiate in years $t + 1$ and $t + 2$ is similar to the one paid in year $t - 1$. Third, the results are not driven by the fact that in period $t - 1$ the sample firms paid a relatively low dividend per share, as their gross dividend in $t - 1$ is similar to the average gross dividend of DM12.30 for the panel of 221 firms during the 1984–1993 period.

We also study the dividend behaviour in the years surrounding dividend cuts (to a still-positive level). Our sample consists of 62 firms that reduced their dividend during the period 1985–1991 and had data available over a 5-year window surrounding the dividend cut, starting with the year prior to the cut.¹⁸ Table 8 confirms the rapid rebound after dividend cuts. Panel A reports that 76% of the sample increases dividends during the 2 years following the cut with 50% doing so in the first year after the reduction. Panel B

¹⁸ The sample excludes eight cases of reductions due to ‘specially designated dividends’, which had been paid in year $t - 1$.

confirms that dividends revert to about the same level as that of $t - 1$ over the 2 years after the cut.

The analysis in Section 4 has shown that annual net earnings losses in firms with a track record of good past performance and stable dividend payout policies cause dividend omissions in 80% of the cases in the year of the loss. In addition, this section has shown that dividend omissions are weakly correlated with more persistent earnings problems and it seems that dividends are more flexible in Germany than in the US or the UK. This leads us on to the next section, which will investigate the link between control and dividend policy.

6. Corporate control and dividend flexibility

The higher flexibility of dividends in Germany compared to the US and the UK may be the consequence of differences in corporate control. First, control is far less concentrated in the average Anglo-American firm than in the average German corporation. This implies that the potential agency problems between shareholders and management are likely to be lower in German firms. Indeed, large shareholders control at least half of the board seats on the supervisory board¹⁹ and hence may be powerful enough to align their interest with those of the management. Consequently, whereas dividend policy in Anglo-American companies may also serve as a corporate governance device bonding managers to generate sufficient cash flow to honour the precommitted level of dividends, dividends may have no or a smaller governance role to play in Germany. Consequently, dividend policy in Germany is expected to be more flexible. Second, in German firms without an individual or family, corporation, insurer or government as a blockholder, the *Hausbank* frequently plays an important role. Such banks usually hold only small equity stakes, but their power is reinforced by the exercise of voting rights on the shares held by individual shareholders who have deposited their shares with the bank (*Depotstimmrecht*). Even in the cases where the *Hausbank* is not able to exercise voting control, it usually holds superior information (and frequently a board seat) as the major creditor. Therefore, the *Hausbank* may also play a leading part in reducing agency problems in German firms. Consequently, both the presence of large blockholders and a *Hausbank* may enable the firms to have a more flexible dividend policy than that of Anglo-American firms.

Using the control data from Table 2 in Section 2, we create a set of dummy variables, WH_{1i} and WH_{2i} , which are equal to 1 if there is no shareholder with at least 25% and 50%, respectively, of the voting equity of firm i , and 0 otherwise. B_i and F_i are set to 1 if a bank, or a family or an individual, respectively, are the controlling

¹⁹ In Germany, supervisory board representation of shareholders and employees is enshrined in corporate law. In companies with more than 500 but fewer than 2000 employees, two-thirds of the supervisory board consists of shareholder representatives with the remainder of board seats being reserved for employee representatives. In larger firms with more than 2000 employees, a system of quasi-parity co-determination exists as employee representatives make up half of the supervisory board but the chairman who is a shareholder representative has a casting vote in case of stale-mate (Goergen and Renneboog, 2003).

Table 9

Ordered probit analysis of the relation between dividend omissions, earnings losses and control structures

	(a)	(b)	(c)	(d)	(e)	(f)
Constant	1.844*** (0.490)	2.044*** (0.349)	2.005*** (0.339)	1.673*** (0.229)	1.737*** (0.240)	1.664*** (0.239)
NI_{it}	0.213 (0.196)	0.209 (0.190)	0.220 (0.185)	0.198 (0.166)	0.167 (0.247)	0.189 (0.180)
$NILOSS_{it}$	-2.258*** (0.399)	-2.292*** (0.394)	-2.299*** (0.382)	-2.162*** (0.343)	-2.261*** (0.328)	-2.143*** (0.314)
$B_{i,t-1}$	-0.794 (0.501)	-0.968*** (0.384)	-0.927*** (0.368)	—	—	—
$F_{i,t-1}$	0.111 (0.443)	-0.076 (0.272)	—	0.190 (0.259)	—	—
$WH_{1i,t-1}$	0.304 (0.474)	—	—	—	-0.007 (0.386)	—
$WHLOSS_{1i,t-1}$	—	—	—	—	1.027* (0.659)	—
$WH_{2i,t-1}$	—	—	—	—	—	0.154 (0.254)
Log-likelihood	-86.125	-86.409	-86.453	-95.385	-90.723	-92.165
Pseudo R^2	35.74%	35.53%	35.50%	28.83%	32.30%	31.24%
R_p^2	73.6%	73.6%	73.6%	71.3%	71.5%	72.0%

The dependent variable equals 0 if the dividend is omitted, 1 if the dividend is cut to a strictly positive level and 2 if the dividend is increased or maintained. The sample consists of (1) 71 firms in which the event year corresponds to the initial year they suffered losses over the period 1989–1993, and (2) 107 firms in which the event year is the first year there was an earnings decline but strictly positive earnings during 1989–1993. In addition, all sample firms have a stable dividend policy and positive earnings over 1984–1988. We excluded firms with unavailable ownership data as well as those firms controlled by the state or foundations. The final sample consists of 129 observations. Earnings (NI_{it}) are standardised by the book value of equity of the previous year. $NILOSS_{it}$ is a dummy variable that equals 1 if there is an annual earnings loss in year t . $B_{i,t-1}$ and $F_{i,t-1}$ are dummy variables which equal 1 if a bank or a family, respectively, are the controlling shareholders of firm i at time $t-1$, and zero otherwise. $WH_{1i,t-1}$ and $WH_{2i,t-1}$ are dummy variables that equal 1 if there is no large shareholder with at least 25% or 50%, respectively, of the voting shares of firm i at time $t-1$, and 0 otherwise. $WHLOSS_{1i,t-1}$ is an interactive term of widely held at 25% level and the presence of an annual earnings loss. All models are estimated with multiplicative heteroskedasticity. All model specifications are significant with p -values < 0.001 . Pseudo R^2 follows McFadden (1974). R_p^2 stands for the percentage of correct predictions. Standard errors are between parentheses. ***, **, * stand for statistical significance at the 1%, 5% and 10% level, respectively, for the two-tailed test.

shareholder of firm i , holding at least 25% of the voting equity, and 0 otherwise.²⁰ The dummy variable of control by corporate shareholders is excluded from the models in Table 9 to avoid multi-collinearity problems. We also create interactive terms with control that are set to 1 if there is an earnings loss in a widely held firm, in a bank-dominated firm, in a family-controlled firm and a firm controlled by an industrial company. All control variables measure the degree of ultimate control, at time $t-1$.

As specified in Section 4, we estimate the effect of a significant deterioration in performance (such as an earnings loss) on dividends after a period of strictly positive

²⁰ For firms that do not have a controlling shareholder holding at least 25% of the votes, WH_{1i} will be equal to 1, and all other control dummy variables such as B_i will be equal to 0.

profits and dividends. The dependent variable of the ordered probit in Table 9 equals 0 if the dividend is omitted, 1 if the dividend is cut to a strictly positive level and 2 if the dividend is increased or maintained. The sample consists of all firms with dividend omissions or cuts (over the period of 1989–1993) which had positive earnings as well as a stable dividend policy over the preceding period (1984–1988).

Table 9 confirms that net earnings losses have a statistically significant effect on the decision to omit dividends. Net income levels are not significantly correlated with the dividend policy decision. The results do not change significantly if we use changes in net earnings instead of levels of earnings. Specifications (b) and (c) indicate that control by banks increases the likelihood of a dividend omission in the wake of earnings losses. This is consistent with the fact that banks, owning directly or indirectly a large percentage of the voting rights, mitigate agency costs, and thus reduce the need for dividends as a monitoring device. This result is consistent with evidence for Japanese firms: Dewenter and Warther (1998) show that *Keiretsu* firms cut and omit dividends more often than other Japanese firms. However, family control (specifications (a), (b) and (d)) as well as control by other categories (not shown) do not have a significant impact on the dividend decision. Despite the fact that control of German firms is similar to that of Austrian firms, our findings contradict Gugler (2003) who concludes that families and other controlling shareholders have an influence on dividends. There may be two reasons for this difference in results. First, only one-fifth of Gugler's sample consists of quoted firms. Although he does not provide any statistics on this, it is likely that a larger proportion of the unquoted firms are family owned and do not have any minority shareholders (hence flexibility of dividends is highest for Austrian family-owned firms). In contrast, all of our firms are quoted. Also, Gugler et al. (2001, p. 54) reports that Austrian banks tend to own majority stakes. Our Table 2 shows that German banks normally hold stakes less than a majority.

Specification (a) shows that the lack of a controlling shareholder—owning at least a blocking minority of 25%—has no impact on the dividend decision. This is confirmed by specification (f) which includes $WH_{2,i}$, a dummy set to one if there is no majority shareholder controlling an absolute majority. Interestingly, specification (e) shows that firms which suffer an earnings loss in $t-1$ and have no controlling shareholder are more reluctant to omit or cut their dividend (the interaction term²¹ $WHLOSS_{1,i,t-1}$ partially compensates for the negative effect of the earnings loss on the dividend policy). This may be due to the fact that widely held firms are more prone to agency costs than firms with a controlling shareholder.

Alternative specifications with variables interacting earnings losses with control by categories of other shareholders did not yield significant results. The control variables are individually and jointly insignificant, and therefore do not explain the decision to decrease, maintain or increase the dividend. This result is true for both the cash flow and the published profits model. A binary probit model for the decision to omit or not to omit the dividend was also estimated to check our initial assumption of ordering and produced similar results [not reported].

²¹ $WHLOSS_{1,i,t-1}$ is obtained by multiplying for each firm the dummy variable $WH_{1,i}$ by the net earnings loss dummy $NLOSS_t$. Hence, the $WHLOSS_{1,i,t-1}$ will be equal to 1 for firms which have an earnings loss in t and no controlling shareholders, and 0 otherwise.

7. Conclusion

To date, there has been a lot of anecdotal evidence that German firms benefit from a more flexible dividend policy than their US or UK counterparts. This paper applies a discrete choice approach to the dividend decision of German firms. We analyse how past, current and future net earnings affect the decision to change the dividend. In order to adjust for the potential conservatism of German accounting practices, we also check whether cash flows determine the decision to change the dividend. The choice of the period of study (1984–1993) is motivated by the fact that at the start of this period there was an economic boom which was followed by a recession.

Consistent with [Lintner \(1956\)](#), we find that net earnings are key determinants of the decision to change the dividend. However, our results also refine [Lintner \(1956\)](#) and confirm the anecdotal evidence that German firms have a more flexible dividend policy. First, we find that the occurrence of a loss is a key determinant in addition to the net earnings level. We observe that 80% of the loss-incurring German firms, with at least 5 years of positive earnings and dividends preceding the loss, omit the dividend in the year of the loss. They do so irrespectively of the size of the loss and of the level of the past and future earnings. Second, the vast majority of German firms quickly revert to their initial dividend payout after the omission or cut. We find that in both cases of dividend omissions and dividend cuts, the majority of the firms reinitiate the dividend within 2 years to revert to the initial dividend payout level. This finding contradicts the predictions of [Lintner \(1956\)](#) and [Miller and Modigliani \(1961\)](#) that managers will only change the dividend if they believe that the firm's earnings will be permanently, not just temporarily, affected. Our results stand in marked contrast with those of [DeAngelo et al. \(1992\)](#) for the US. They find that firms are more likely to reduce their dividend if their earnings problems are of a permanent nature.

Finally, when measures of control are added to the probit model, bank control is associated with a higher likelihood to omit the dividend when the firm suffers a loss. This result suggests that bank control (which depends on the voting equity the bank owns as well as its proxy votes) mitigates informational asymmetry and agency costs. However, control by other types of shareholders does not influence the dividend decision. In widely held loss-incurring firms we find some evidence of a reluctance to cut the dividend, which suggests that these firms are more prone to agency costs than firms with a controlling shareholder and therefore rely more heavily on dividend policy as a corporate governance mechanism.

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